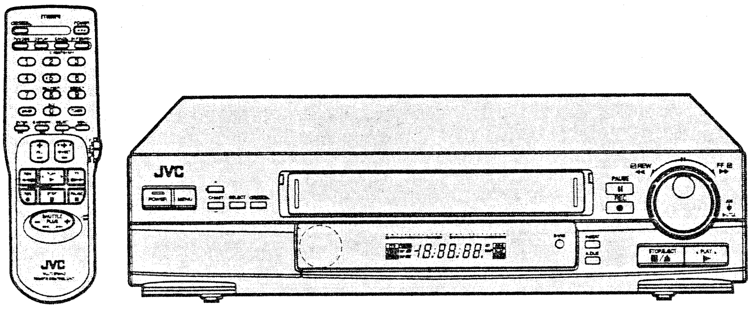
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

HR-S5300U/S7300U



VCR plus+ C3 w/Cable Channel Changer

Hi-Fi S VHS

SPECIFICATIONS *(The specifications shown pertain specifically to the model HR-S5300U)*

GENERAL

Power requirement	: AC 120 V∿ , 60 Hz
Power consumption	: 26 W
Temperature	
Operating	: 5°C to 40°C (41°F to 104°F)
Storage	: –20°C to 60°C (–4°F to140°F)
Operating position	: Horizontal only
Dimensions (W x H x D)	: 400 x 94 x 341 mm (15-3/4" x 3-3/4" x 13-7/16")
Weight	: 4.5 kg (8.2 lbs)
Format	: S-VHS/VHS NTSC standard
Maximum recording time	
SP	: 210 min. with ST-210 video cassette
EP	: 630 min. with ST-210 video cassette

VIDEO/AUDIO

Signal system	: NTSC-type color signal and EIA monochrome signal, 525 lines/60 fields
Recording/ Playback system	: DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 240 lines (VHS) 400 lines (S-VHS)
Frequency range	
Normal audio	: 70 Hz to 10,000 Hz
Hi-Fi audio	: 20 Hz to 20,000 Hz
Input/Output	: RCA connectors (IN x 2, OUT x 1) S-VIDEO connectors (INx1, OUTx1)

TUNER

Tuning system	: Frequency-synthesized tuner
Channel coverage	
VHF	: Channels 2–13
UHF	: Channels 14–69
CATV	: 113 Channels
RF output	: Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

TIMER

Clock reference	: Quartz
Program capacity	: 1-year programmable timer/ 8 programs
Memory backup time	: Approx. 60 min.

ACCESSORIES

Provided accessories	: RF cable (F-type), Infrared remote control unit, "AAA" battery x 2, Cable Box Controller, S-Video cable (4-pin), Audio/Video cable, Mini-plug cable

Specifications shown are for SP mode unless otherwise specified. E. & O.E. Design and specifications subject to change without notice.

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The following table lists the differing points between Models (HR-S5300U and HR-S7300U) in this series.

	HR-S5300U	HR-S7300U
DYNAMIC CONTRAST	×	○
VIDEO STABILIZER	×	○
SIDE PANEL	×	○

× : NOT USED ○ : USED

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

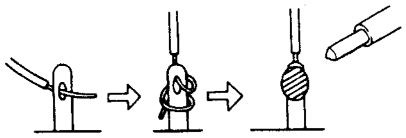


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

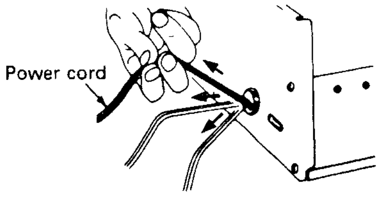


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

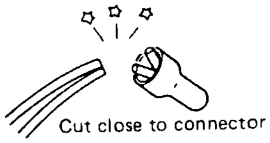


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

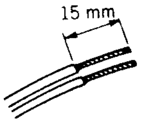


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

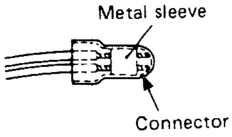


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

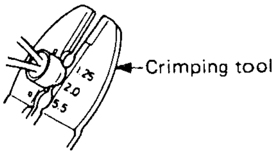


Fig. 6

(5) Check the four points noted in Fig. 7.

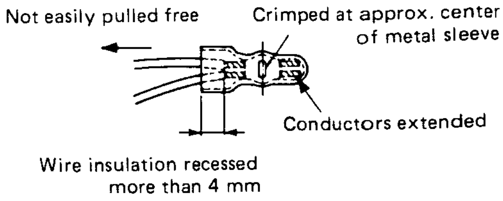

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

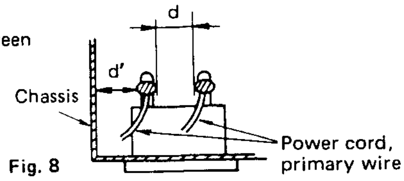


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

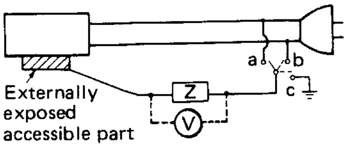


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

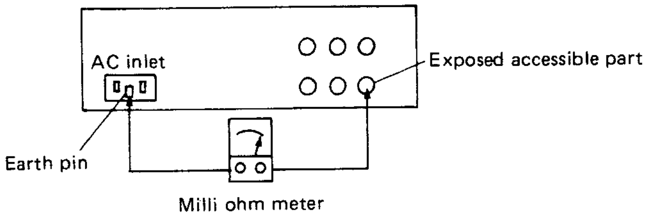


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 µF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

Dear Customer,
Thank you for purchasing the JVC VHS video cassette recorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of your new VCR.

CAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK.
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION:
This video cassette recorder should be used with AC 120V∿, 60Hz only.
To prevent electric shocks and fire hazards, DO NOT use any other power source.

CAUTION:
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION:
POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

CAUTION:
Changes or modifications not approved by JVC could void user's authority to operate the equipment.

Failure to heed the following precautions may result in damage to the VCR, remote control or video cassette.

1. **DO NOT place the VCR . . .**
   ... in an environment prone to extreme temperatures or humidity.
   ... in direct sunlight.
   ... in a dusty environment.
   ... in an environment where strong magnetic fields are generated.
   ... on a surface that is unstable or subject to vibration.
2. **DO NOT block the VCR's ventilation openings.**
3. **DO NOT place heavy objects on the VCR or remote control.**
4. **DO NOT place anything which might spill on top of the VCR or remote control.**
5. **AVOID violent shocks to the VCR during transport.**

**MOISTURE CONDENSATION
Moisture in the air will condense on the VCR when you move it from a cold place to a warm place, or under extremely humid conditions—just as water droplets form on the surface of a glass filled with cold liquid. Moisture condensation on the head drum will cause damage to the tape. In conditions where condensation may occur, keep the VCR's power turned on for a few hours to let the moisture dry.

**ABOUT HEAD CLEANING
Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Be sure to contact your nearest JVC dealer if such troubles occur.

VCR Plus+C^3 and PlusCode are trademarks of Gemstar Development Corporation.
The VCR Plus+C^3 system is manufactured under licence from Gemstar Development Corporation.
DSS™ is an official trademark of DIRECTV, Inc., a unit of GM Hughes Electronics.

S-VHS

- Cassettes marked "S-VHS" and "VHS" can be used with this video cassette recorder. However, S-VHS recordings are possible only with cassettes marked "S-VHS".

IMPORTANT PRODUCT SAFETY INSTRUCTIONS

Electrical energy can perform many useful functions. But improper use can result in potential electrical shock or fire hazards. This product has been engineered and manufactured to assure your personal safety. In order not to defeat the built-in safeguards, observe the following basic rules for its installation, use and servicing.

ATTENTION:
Follow and obey all warnings and instructions marked on your product and its operating instructions. For your safety, please read all the safety and operating instructions before you operate this product and keep this booklet for future reference.

INSTALLATION

1. Grounding or Polarization
(A) Your product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.
If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
(B) Your product may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature.
If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

2. Power Sources
Operate your product only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. If your product is intended to operate from battery power, or other sources, refer to the operating instructions.

3. Overloading
Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

4. Power Cord Protection
Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

5. Ventilation
Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.
- Do not block the openings by placing the product on a bed, sofa, rug or other similar surface.
- Do not place the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

6. Wall or Ceiling Mounting
The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

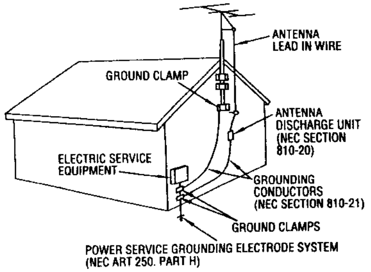
ANTENNA INSTALLATION INSTRUCTIONS

1. Outdoor Antenna Grounding
If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding connectors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

2. Lightning
For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

3. Power Lines
An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE, ANSI/NFPA 70


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250. PART H)

NEC – NATIONAL ELECTRICAL CODE

USE

1. Accessories

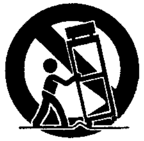
To avoid personal injury:

- Do not place this product on an unstable cart, stand, tripod, bracket, or table. It may fall, causing serious injury to a child or adult, and serious damage to the product.
- Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product.
- Use a mounting accessory recommended by the manufacturer and follow the manufacturer's instructions for any mounting of the product.
- Do not try to roll a cart with small casters across thresholds or deep-pile carpets.

2. Product and Cart Combination

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING
(Symbol provided by RETAC)



3. Water and Moisture

Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool and the like.

4. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

5. Attachments

Do not use attachments not recommended by the manufacturer of this product as they may cause hazards.

6. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

7. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

SERVICING

1. Servicing

If your product is not operating correctly or exhibits a marked change in performance and you are unable to restore normal operation by following the detailed procedure in its operating instructions, do not attempt to service it yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

2. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the product.
c. If the product has been exposed to rain or water.
d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e. If the product has been dropped or damaged in any way.
f. When the product exhibits a distinct change in performance—this indicates a need for service.

3. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

4. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

HOW TO USE THIS INSTRUCTION MANUAL

- All major sections and subsections are listed in the Table Of Contents on page 5. Use this when searching for information on a specific procedure or feature.
- The Index on pages 61–63 lists frequently-used terms, and the number of the first page on which they are used or explained in the manual. This section also illustrates the controls and connections on the front and rear panel, the front display panel and the remote control.
- The ☞ mark signals a reference to another page for instructions or related information.
- Operation buttons necessary for the various procedures are clearly indicated through the use of illustrations at the beginning of each major section.

BEFORE YOU INSTALL YOUR NEW VCR . . .

. . . please read the sections/literature listed below.

- "Cautions" on page 2
- "Important Products Safety Instructions" on the previous pages

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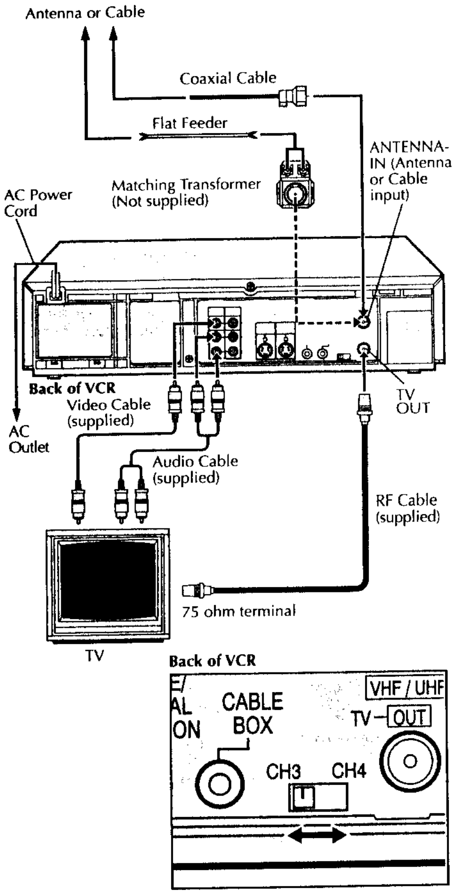
Connections


Antenna or Cable
Coaxial Cable
Flat Feeder
ANTENNA-IN (Antenna or Cable input)
Matching Transformer (Not supplied)
AC Power Cord
Back of VCR
Video Cable (supplied)
AC Outlet
Audio Cable (supplied)
TV OUT
RF Cable (supplied)
75 ohm terminal
TV
Back of VCR
E/ AL ON
CABLE BOX
VHF/UHF
TV-OUT
CH3
CH4

Basic Connections

1 CHECK CONTENTS

Make sure the package contains all of the accessories listed in "SPECIFICATIONS" (☞ pg. 60).

2 SITUATE VCR

Place the VCR on a stable, horizontal surface.

3 CONNECT VCR TO TV

The connection method you use depends on the type of TV you have.

RF Connection

- *To Connect To A TV With NO AV Input Terminals . . .*
  - a– Disconnect the TV antenna from the TV.
  - b– Connect the TV antenna cable to the ANTENNA IN jack on the rear of the VCR.
  - c– Connect the supplied RF cable between the TV OUT jack on the rear of the VCR and the TV's antenna terminal.

AV Connection

- *To Connect To A TV With AV Input Terminals . . .*
  - a– Connect the antenna, VCR and TV as shown in the illustration.
  - b– Connect an Audio/Video Cable between the AUDIO OUT and VIDEO OUT jacks on the rear of the VCR and the AV IN jacks on the TV.

If you have a TV with S-VIDEO input terminals, see "S-VIDEO Connection" on page 7.

4 CONNECT VCR TO POWER SOURCE

Connect the power plug to an AC outlet.

- The clock will automatically be set when the antenna is connected and when the AC is first connected to the VCR (☞ pg. 8).

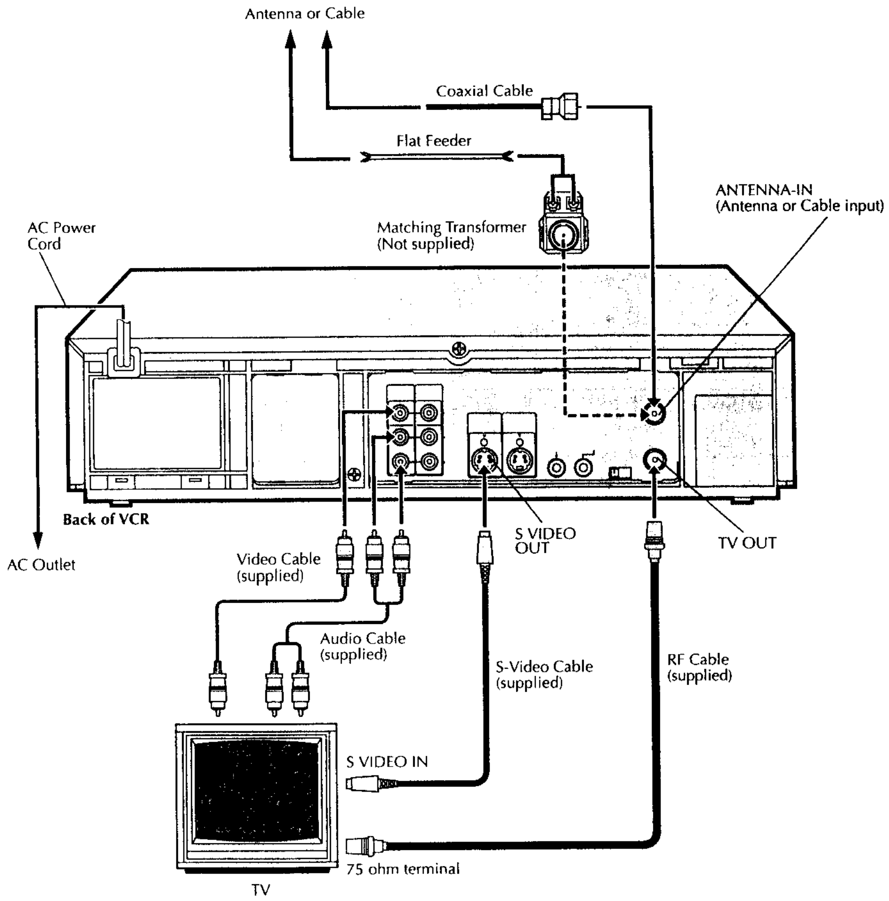
5 FINAL PREPARATION FOR USE

Select the VCR channel (3 or 4) by setting the switch on the rear of the VCR as shown in the illustration.

Turn on the power to the TV. You are now able to perform simple playback (☞ pg. 23) and recording (☞ pg. 24). (If 'Auto' is displayed on the front display panel, the clock is being set automatically. Wait for the time to be displayed before powering on the VCR.)

NOTES:

- *The VCR channel is the channel on the TV which will display the audio and video signals from the VCR. The VCR's CH3-CH4 switch sets the VCR channel to CH3 or CH4.*
- *The CH3-CH4 switch is preset to the CH3 position. Set to CH4 if CH3 is used for broadcasting in your area.*
- *If your TV has no AV input terminals, set the channel on the TV to correspond to the CH3-CH4 switch on the back of the VCR.*
- *Even if your TV has AV input terminals, you must connect it to the VCR using an RF cable in order to record one show while watching another (☞ pg. 34).*
- *For full identification of the VCR's rear panel, refer to the Index (REAR VIEW ☞ pg. 62).*


Antenna or Cable
Coaxial Cable
Flat Feeder
ANTENNA-IN (Antenna or Cable input)
AC Power Cord
Matching Transformer (Not supplied)
Back of VCR
AC Outlet
Video Cable (supplied)
S VIDEO OUT
TV OUT
Audio Cable (supplied)
S-Video Cable (supplied)
RF Cable (supplied)
S VIDEO IN
75 ohm terminal
TV

NOTES:

- To make the most of Super VHS picture performance, we recommend you use the S-VIDEO connection.
- To operate the VCR with your TV using the S VIDEO connection, set your TV to the AV mode using the TV's remote control.
  You can also use the **TV/VIDEO** button on the VCR's remote control to set your TV to the AV mode. (☞ pg. 53)

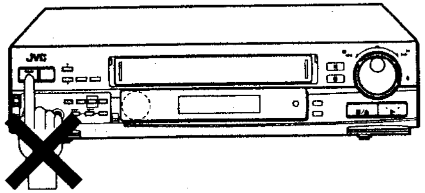
S-VIDEO Connection

CONNECT VCR TO TV

a– Perform both RF connection and AV connection as described in step 3 of "Basic Connections" (☞ pg. 6).

b– Connect the S-Video cable between the S-VIDEO OUT jack on the rear of the VCR and the S-VIDEO IN jack on the TV.

Clock



ATTENTION CABLE BOX SUBSCRIBERS

If you perform the Advanced Auto Clock Set procedure . . .

- Select the PBS channel on your cable box before plugging your VCR's power plug into the AC outlet. (If you have more than one PBS channel, you may have to select an alternative PBS channel if Advanced Auto Clock Set is not successful.)
- If there is no PBS channel in your area, perform the Manual Clock Set procedure (☞ pg. 11).
- For automatic clock adjustment to take place the VCR's power must be off and the cable box must be set to the PBS channel at clock adjustment times.
- If you perform Advanced Auto Clock Set successfully, D.S.T. will be set to "AUTO". At the D.S.T. adjustment time (☞ pg. 11), your VCR's power must be off and your cable box must be set to the host PBS channel in your area for the D.S.T. adjustment to take place. If the clock is not set correctly, change the D.S.T. setting to "ON" or "OFF. See step **9** of Semi-Auto procedure (☞ pg. 10) or step **6** of Manual procedure (☞ pg. 11).

Advanced Auto Clock Set

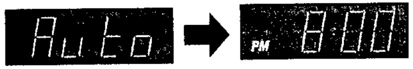
The time and date can be set automatically from clock setting data that is transmitted by one of the regular TV broadcast channels. We call this TV channel the "Host Channel" and it is a PBS channel in your area. With the antenna cable connected, your VCR can automatically set the clock when the power plug is first connected to an AC outlet.

The Advanced Auto Clock Set function scans all the channels received by your VCR to find the Host Channel and then sets the clock.

*Don't turn the power on until the time (or "- - : - - ") appears on the front display panel.

Before the clock is set, AUTO appears on the display.

NOT SET **SET**



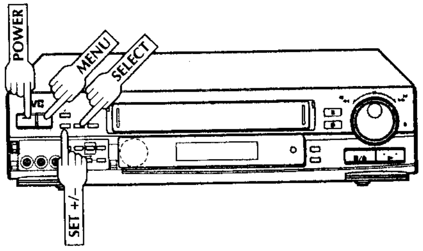
After setting, the current time appears (in hours and minutes).

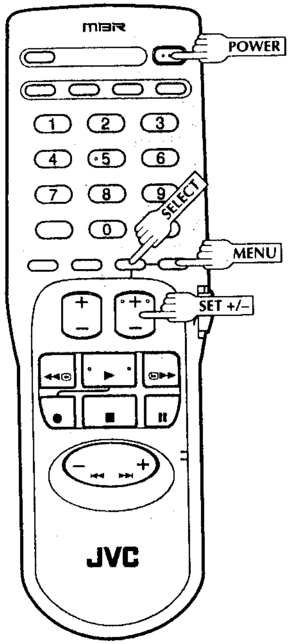
The Advanced Auto Clock Set function will normally set the clock correctly. However, if an incorrect time is displayed on the front display panel, you may be receiving the clock setting data of a PBS channel from an adjacent time zone, or an incorrect PBS channel from a cable TV system. In this case, perform the Semi-Auto (☞ pg. 10) or Manual (☞ pg. 11) clock setting procedure.

If "AUTO CLOCK SET" or "SEMI-AUTO CLOCK SET" is selected at the Override Auto Clock Set screen on page 10, the clock will be adjusted automatically by the Host PBS every hour on the hour (except for 11:00 PM, midnight, 1:00 AM and 2:00 AM) by the incoming PBS channel clock setting data. (This automatic clock adjustment can only be performed when the VCR's power is turned off. The clock will be adjusted on the hour based on the time displayed on the VCR, not on the actual real time.) The default setting is "AUTO CLOCK SET".

If "- - : - - " appears on the display, your antenna cable may not be connected to the VCR, there may not be a Host PBS signal available in your area, or your cable box may not be set to the PBS channel. If the antenna connection or cable box setting is incorrect, connect the antenna cable to the VCR or select the correct cable channel. Then power on and power off the VCR, the Advanced Auto Clock Set mode will be automatically reactivated and "Auto" will be displayed on the VCR's front panel. If everything is connected and set correctly, perform the Manual Clock Set procedure (☞ pg. 11).

NOTE:
If, due to a power outage or other event, the memory backup fails, Advanced Auto Clock Set is performed when power is restored to the VCR.





Clock Setting

Perform clock setting only if the clock has not been set correctly by Advanced Auto Clock Set. Access the Override Auto Clock Set screen to choose the Auto, Semi-Auto or Manual clock setting procedure. Each procedure starts from step 5. *Auto need only be selected if Semi-Auto or Manual had previously been selected.

Preparation

1

TURN ON THE VCR

Press **POWER**.

2

ACCESS ON-SCREEN MENU

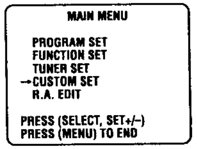
Press **MENU** as many times as necessary to bring up the Main Menu screen.

- You can change the on-screen display language to Spanish, French, and back to English.
  If necessary, see "Language" on page 12.

3

ACCESS CUSTOM SET SCREEN

At the Main Menu screen, place the arrow next to "CUSTOM SET" by pressing **SET +/–**, then press **SELECT**.

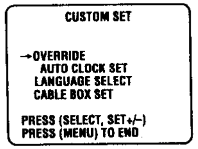


```
MAIN MENU

  PROGRAM SET
  FUNCTION SET
  TUNER SET
→CUSTOM SET
  R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```

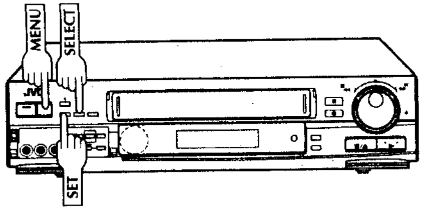
4

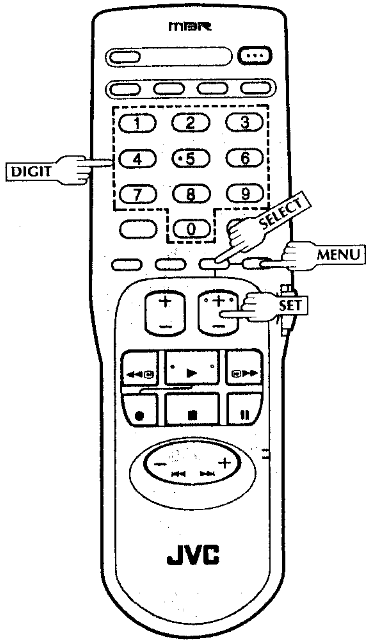
ACCESS CLOCK SET MODE SELECT SCREEN

Place the arrow at the Custom Set screen next to "OVERRIDE AUTO CLOCK SET" by pressing **SET +/–**. Then press **SELECT**.



```
CUSTOM SET

→OVERRIDE
   AUTO CLOCK SET
  LANGUAGE SELECT
  CABLE BOX SET

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```





Semi-Auto

5 SELECT MODE

At the Override Auto Clock Set screen, place the arrow next to "SEMI-AUTO CLOCK SET" by pressing **SET +/–**, then press **SELECT**.

```
OVERRIDE AUTO CLOCK SET

 AUTO CLOCK SET
→SEMI-AUTO CLOCK SET
 MANUAL CLOCK SET

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```

6 ACCESS SELECT SCREENS

At the Semi-Auto Clock Set screen, place the arrow next to the desired mode by pressing **SET +/–**, then press **SELECT**.

To select the Host Channel — step **7**
To select the Time Zone — step **8**
To select the D.S.T. mode — step **9**

```
SEMI-AUTO CLOCK SET

→HOST CHANNEL SELECT
 TIME ZONE SELECT
 D.S.T. SELECT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```

7 SELECT HOST CHANNEL

You can either select "AUTO", or enter a PBS channel number. For automatic channel selection, simply press **MENU**. To manually select the PBS channel, press the appropriate **DIGIT** key or **SET +/–** to cycle through the channel numbers (hold button down to speed through numbers) and stop when the desired number appears. Press **MENU** and the Semi-Auto Clock Set screen reappears.

```
HOST CHANNEL SELECT

     (CATV)
     CH  AUTO

PRESS (SET+/–)  TO SELECT
PRESS (MENU) TO END
```

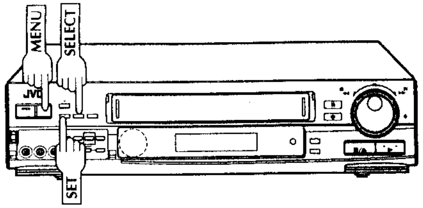
NOTES:

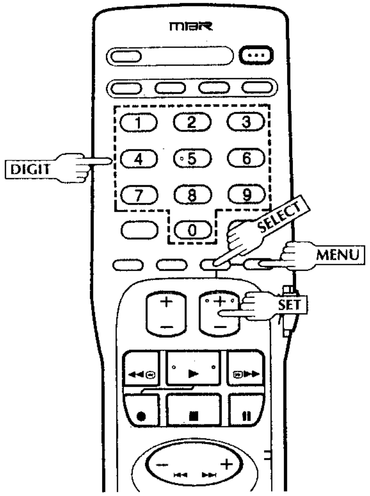
- *For cable box users: Select "AUTO" or the channel on your VCR that receives the cable box channels, and set the cable box to the PBS channel.*
- *There are some PBS channels that do not transmit clock setting data.*

8 SELECT TIME ZONE

You can either select "AUTO", or select the correct zone. If you selected "AUTO" in step **7** and if you live near the boundary of an adjacent time zone, or receive cable TV channels, a PBS channel from a different time zone may become your host channel. Therefore, in this case make sure to manually select the correct time zone. Place the arrow next to your choice by pressing **SET +/–**, then press **MENU** to return to the Semi-Auto Clock Set screen.

```
TIME ZONE SELECT

→AUTO         MOUNTAIN
 ATLANTIC     PACIFIC
 EASTERN      ALASKA
 CENTRAL      HAWAII

PRESS (SET+/–)  FOR CHOICE
PRESS (MENU) TO END
```





****AUTO DAYLIGHT SAVING TIME**

This function enables automatic adjustment of the VCR's clock at the start and end of Daylight Saving Time.
With Auto DST activated, . . .
. . . on the first Sunday of April at 2:00 AM, the clock is adjusted to 3:00 AM.
. . . on the last Sunday of October at 2:00 AM, the clock is adjusted to 1:00 AM.

Auto

5 SELECT MODE

At the Override Auto Clock Set screen, place the arrow next to "AUTO CLOCK SET" by pressing **SET +/–**, then power off the VCR. Do not power it on again until the clock has been adjusted. The clock is automatically adjusted on the hour except at 11:00 PM, midnight, 1:00 AM and 2:00 AM. (The clock will be adjusted on the hour based on the time displayed on the VCR, not on the actual real time.)

9 SELECT D.S.T. MODE

You have three choices:
a–Select "AUTO" and the adjustment to your VCR's clock will be made according to the incoming signal from the host channel.
b–Select "ON" and the adjustment will be made based on the clock itself.
c–Select "OFF" if Daylight Saving Time doesn't apply to you.

```
D.S.T. SELECT

    →AUTO
     ON
     OFF

PRESS (SET+/–)  FOR CHOICE
PRESS (MENU) TO END
```

Place the arrow next to your choice by pressing **SET +/–**, then press **MENU** and the Semi-Auto Clock Set screen reappears.

IMPORTANT
After setting the Semi-Auto clock set, make sure that the VCR is off before the next hour so that the clock can be adjusted. (The clock is automatically adjusted on the hour except at 11:00 PM, midnight, 1:00 AM and 2:00 AM.)

Manual

5 SELECT MODE

At the Override Auto Clock Set screen (☞ pg. 10), place the arrow next to "MANUAL CLOCK SET" by pressing **SET +/–**, then press **SELECT**.

6 SET DATE, TIME AND D.S.T.

The Manual Clock Set screen is displayed and the first setting that can be set begins blinking.
Press **SET +/–** to set the month, then press **SELECT**. The day display begins blinking. Repeat the procedure to set the day, year, hour (including AM/PM), minutes and D.S.T. (Daylight Saving Time).

```
MANUAL CLOCK SET

 DATE      1/ 1/96 MON
 TIME     --:-- AM
 D.S.T.          ON

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```

- As for the D.S.T. setting

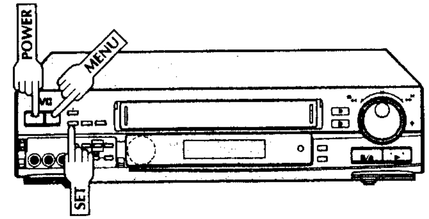
a–Set to "ON" and the adjustment will be made based on VCR's clock.
b–Set to "OFF" if D.S.T. doesn't apply to you.

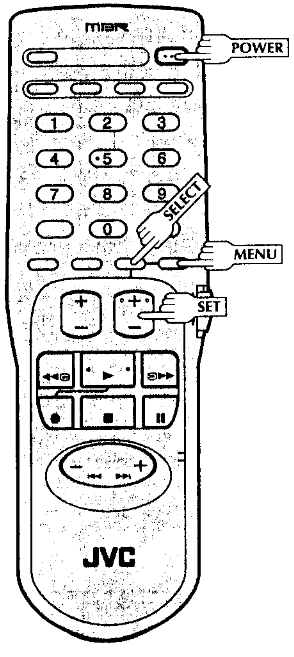
When you're finished with this set-up procedure, press **MENU** to start the clock.

7 MAKE CORRECTIONS

To change any of the settings, press **SELECT** until the item you want to change blinks, then set as in step **6**.

Language





This VCR offers you the choice to view on-screen messages in English, Spanish or French (not including messages superimposed on the TV picture). Select the desired language using this procedure. The default setting is "ENGLISH".

1

TURN ON THE VCR

Press **POWER**.

2

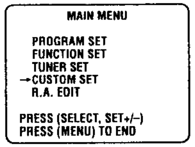
ACCESS ON-SCREEN MENU

Press **MENU** as many times as necessary to bring up the Main Menu screen.

3

ACCESS CUSTOM SET SCREEN

At the Main Menu screen, place the arrow next to "CUSTOM SET" by pressing **SET +/–**, then press **SELECT**.


MAIN MENU

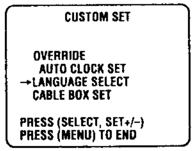
PROGRAM SET
FUNCTION SET
TUNER SET
→CUSTOM SET
R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

4

ACCESS LANGUAGE SELECT SCREEN

The messages are preset to appear in English. If you want to see them in Spanish or French, place the arrow next to "LANGUAGE SELECT" by pressing **SET +/–**, then press **SELECT**.


CUSTOM SET

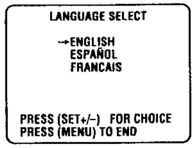
OVERRIDE
AUTO CLOCK SET
→LANGUAGE SELECT
CABLE BOX SET

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

5

SELECT LANGUAGE

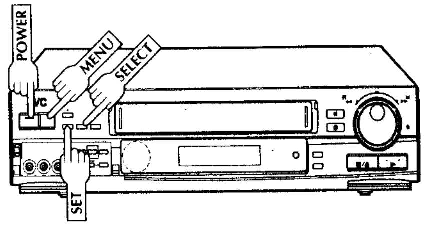
At the Language Select screen, place the arrow next to the desired language by pressing **SET +/–**, then press **MENU** as many times as necessary to return to the normal screen.

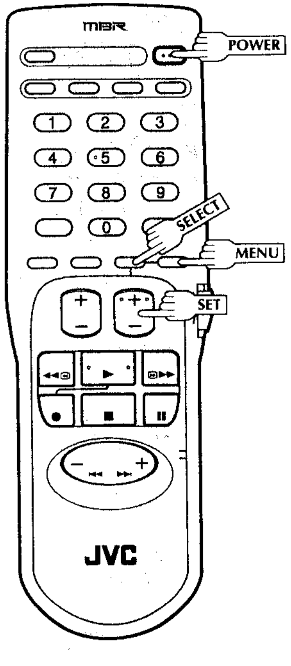

LANGUAGE SELECT

→ENGLISH
ESPAÑOL
FRANCAIS

PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

Tuner





Set Receivable Channels

1

TURN ON THE VCR

Press **POWER**.

2

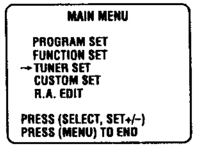
ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

3

ACCESS TUNER SET SCREEN

Place the arrow next to "TUNER SET" by pressing **SET +/–**, then press **SELECT**.


MAIN MENU

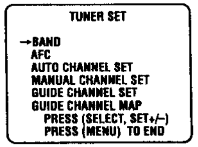
PROGRAM SET
FUNCTION SET
→TUNER SET
CUSTOM SET
R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

4

ACCESS BAND SCREEN

Place the arrow next to "BAND" by pressing **SET +/–**, then press **SELECT**.

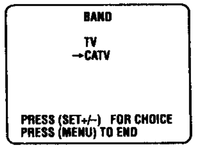

TUNER SET

→BAND
AFC
AUTO CHANNEL SET
MANUAL CHANNEL SET
GUIDE CHANNEL SET
GUIDE CHANNEL MAP
PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

5

SET FREQUENCY BAND

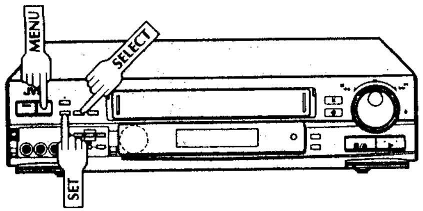
If you receive your TV channels from an external antenna, select "TV". If you receive your TV channels from a cable TV system, select "CATV". Place the arrow next to your choice by pressing **SET +/–**, then press **MENU** to return to the Tuner Set screen.

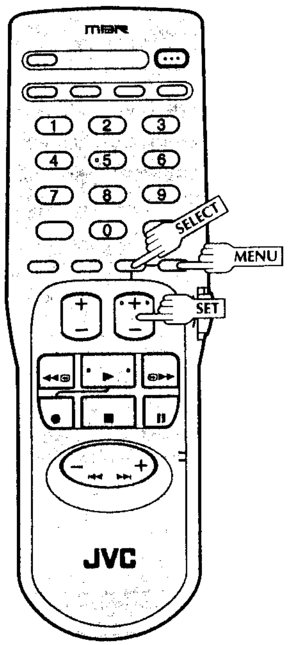

BAND

TV
→CATV

PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

CONTINUED ON NEXT PAGE.





6 PERFORM AUTO CHANNEL SET

Place the arrow next to "AUTO CHANNEL SET" by pressing **SET +/–**, then press **SELECT**. Receivable channels in your area are automatically assigned to the **CH +/–** buttons, and non-receivable channels are skipped.

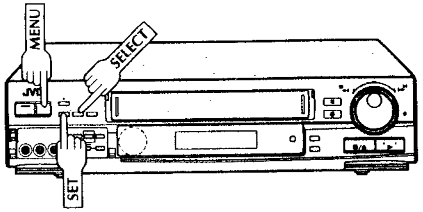
```
AUTO CHANNEL SET

   (TV)
CH   2  ADD

SCANNING ...


PRESS (MENU) TO END
```

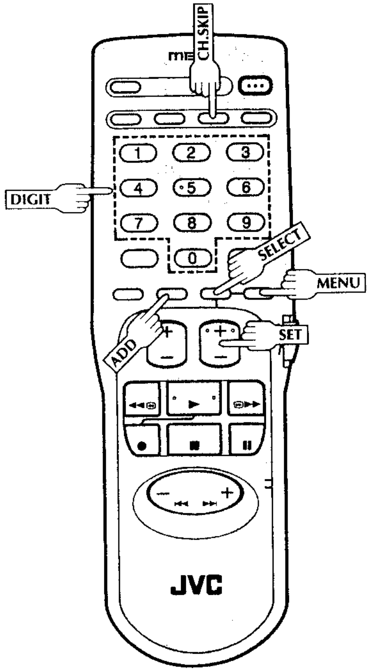
NOTES:

- *At the end of Auto Channel Set, "SCAN COMPLETED" appears on screen.*
- *If the scan was unsuccessful, "SCAN COMPLETED–NO SIGNAL" appears on screen. Check the band setting and connections and start again.*

7 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.





Add Or Delete A Channel

1 ACCESS TUNER SET SCREEN

Access by performing steps **2** and **3** of the Tuner procedure on page 13.

- To add a channel, go to step **2**.
- To delete a channel, skip to step **4**.

2 ACCESS AFC SCREEN

Place the arrow next to "AFC" by pressing **SET +/–**, then press **SELECT**.

3 MAKE SELECTION

Place the arrow next to "SPCL" by pressing **SET +/–**, then press **MENU** to return to the Tuner Set screen.

```
AFC

 NORM
→SPCL



PRESS (SET+/–)  FOR CHOICE
PRESS (MENU) TO END
```

4 ACCESS MANUAL CHANNEL SET SCREEN

Place the arrow next to "MANUAL CHANNEL SET" by pressing **SET +/–**, then press **SELECT**.

5 STORE DESIRED CHANNEL

Input the channel number using the **DIGIT** keys or by pressing **SET +/–**, then press **ADD** to add or **CH.SKIP** to delete. Repeat for each channel you want to store or skip.

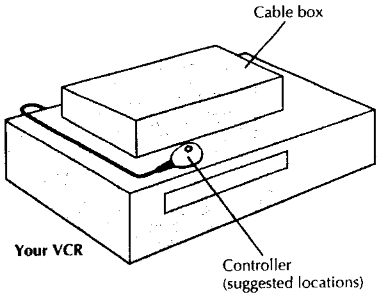
```
MANUAL CHANNEL SET

   (CATV)
CH 125 SKIP


SELECT CH NO. AND
PRESS (ADD/SKIP)
PRESS (MENU) TO END
```

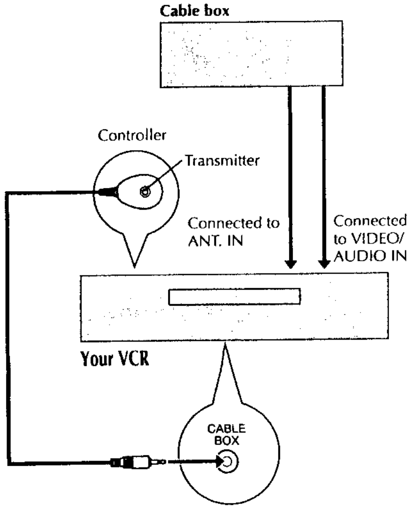
6 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

Tuner And Cable Box Controller

Suggested Location
Place the cable box on top of the VCR. Attach the VCR's Cable Box Controller to the top of the VCR with the Controller's transmitter pointed towards the cable box's remote sensor.





This procedure is required if you receive your TV channels through a cable box (descrambler). The Cable Box Controller allows the VCR to automatically switch the cable box channel during timer-recording. The Cable Box Controller is effective for recording shows that have been programmed using VCR Plus+ (☞ pg. 38) or On-Screen Timer Programming (☞ pg. 40).

Situate And Connect Controller

1 SITUATE CONTROLLER

Place the Cable Box Controller so that the path between its transmitter and the cable box's remote sensor is unobstructed.

2 ATTACH CONTROLLER

Fasten securely using the supplied adhesive strips.

3 CONNECT CABLE BOX TO VCR

The connection method depends on the type of cable box you have.

If your cable box has AUDIO and VIDEO OUT connectors . . .
. . . connect them to the AUDIO and VIDEO IN connectors on your VCR.
If your cable box doesn't have AUDIO and VIDEO OUT connectors . . .
. . . connect the antenna output connector on the cable box to the ANT.IN connector on the rear of your VCR. Set the VCR tuner to the same channel as the cable box RF output (see page 18 also).

NOTE:
Refer to your cable box's instruction manual during connection.

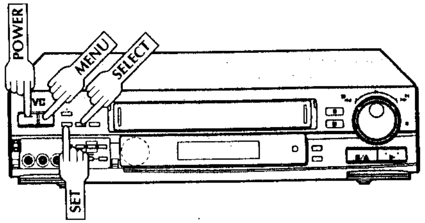
4 CONNECT CONTROLLER TO VCR

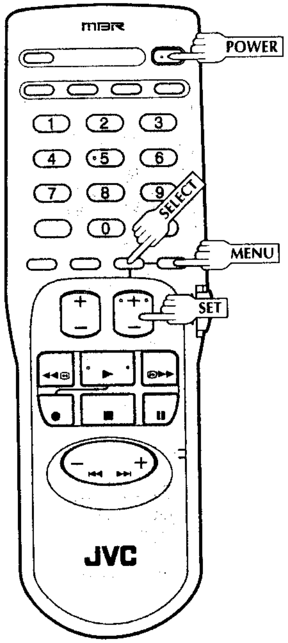
Connect to the CABLE BOX connector on your VCR.

About Your Cable Box
This VCR has two separate methods to control your Cable Box.

- *The VCR's Wireless Remote Control Unit can control your Cable Box.*
  This eliminates the need for a separate Cable Box Remote Control Unit.
- *The VCR's Cable Box Controller can also control your Cable Box.*
  This allows the VCR to change your Cable Box's channel number during timer recording.

Each method must be set up separately. To set up the VCR's Remote Control unit, refer to page 54. To set up the Cable Box Controller go to page 17.





Set Cable Box Output Channel

1 TURN ON THE VCR

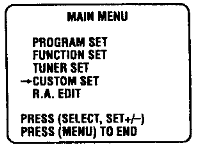
Press **POWER**.

2 ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

3 ACCESS CUSTOM SET SCREEN

Press **SET +/–** to place the arrow next to "CUSTOM SET", then press **SELECT**.

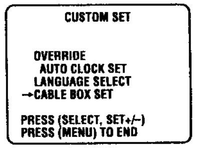

MAIN MENU

PROGRAM SET
FUNCTION SET
TUNER SET
→CUSTOM SET
R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

4 ACCESS CABLE BOX SET SCREEN

Press **SET +/–** to place the arrow next to "CABLE BOX SET", then press **SELECT**.

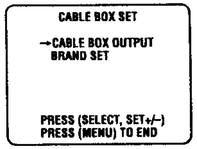

CUSTOM SET

OVERRIDE
AUTO CLOCK SET
LANGUAGE SELECT
→CABLE BOX SET

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

5 ACCESS CABLE BOX OUTPUT SCREEN

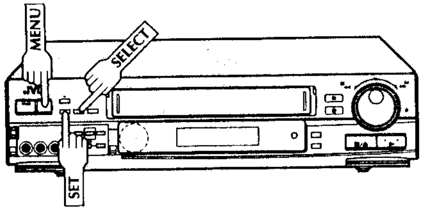
Press **SET +/–** to place the arrow next to "CABLE BOX OUTPUT", then press **SELECT**.

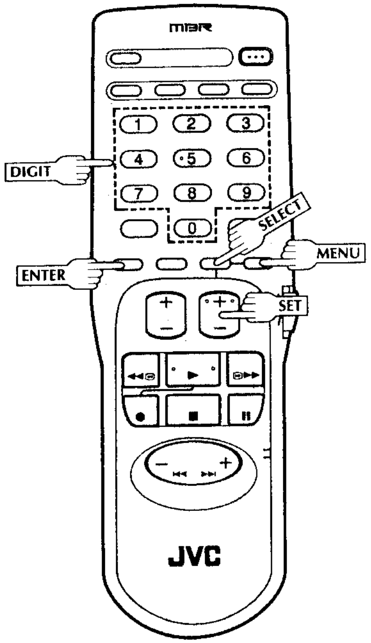

CABLE BOX SET

→CABLE BOX OUTPUT
BRAND SET

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

CONTINUED ON NEXT PAGE.





6 SELECT CABLE BOX OUTPUT CHANNEL

Your selection depends on how your cable box is connected to your VCR.

```
     CABLE BOX OUTPUT
      →OFF
        ON CH2
        ON CH3
        ON CH4
        ON CH5
        ON CH6
        ON LINE
PRESS (SET+/-)  FOR CHOICE
PRESS (MENU) TO END
```

If your cable box is connected to your VCR using an RF connection . . .
. . . press **SET+/–** to place the arrow next to the channel number representing the cable box's output (2–6).

If your cable box is connected to your VCR's AUDIO/VIDEO IN connectors . . .
. . . press **SET+/–** to place the arrow next to "ON LINE".

7 RETURN TO CABLE BOX SET SCREEN

Press **MENU**.

Set Cable Box Brand

1 TURN ON CABLE BOX

Select a channel other than channel 9 on your Cable Box.

2 ACCESS BRAND SET SCREEN

At the Cable Box Set screen, press **SET +/–** to place the arrow next to "BRAND SET", then press **SELECT.**

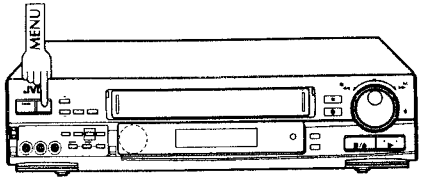
```
      CABLE BOX SET

     CABLE BOX OUTPUT
   →BRAND SET



PRESS (SELECT, SET+/-)
PRESS (MENU) TO END
```

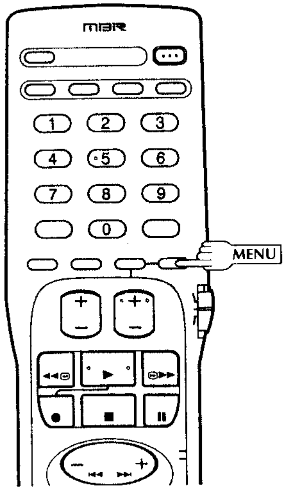
3 ENTER CABLE BOX BRAND

Press the appropriate **DIGIT** keys to enter the Cable Box Code from the CABLE BOX BRAND LIST on page 19, then press **ENTER**.

```
    CABLE BOX BRAND

          1


SELECT BRAND NO. AND
PRESS (ENTER)
PRESS (MENU) TO END
```

- If the cable box's channel changes to 9, setting is complete.
- If there are more than one code number listed for your brand of cable box, repeat step **3** until the cable box's channel changes to 9.
- If you go through all listed code numbers and the channel doesn't change, try all other numbers between 1 and 69. That is because, maybe, your cable box model is not listed.





NOTES:

- *Although the supplied Cable Box Controller is compatible with many different cable box brands, it is possible that it will not work with your cable box.*
- *If your cable box doesn't respond to any code between 1 and 69, you can't use the Controller to change cable box channels. In this case, make sure to leave the cable box turned on and tuned to the proper channel before the scheduled start of timer recording.*
  Please contact your cable company about the possibility of exchanging your current cable box with one that is compatible with your VCR.
- *The VCR can only change the cable box channel through the Cable Box Controller during timer recording.*
- *If your cable box is one that can't be operated with a remote control (has no remote sensor), you can't use the Cable Box Controller to change its channels. Make sure to leave the cable box turned on and tuned to the proper channel before the scheduled start of timer recording.*
- *If you are unable to set the Cable Box Controller, please contact JVC toll free at 1-800-252-5722.*

4 RETURN TO NORMAL SCREEN

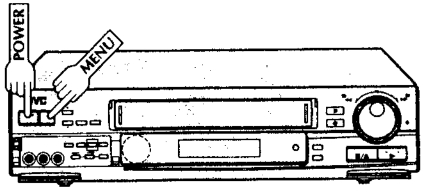
Press **MENU** as many times as necessary.

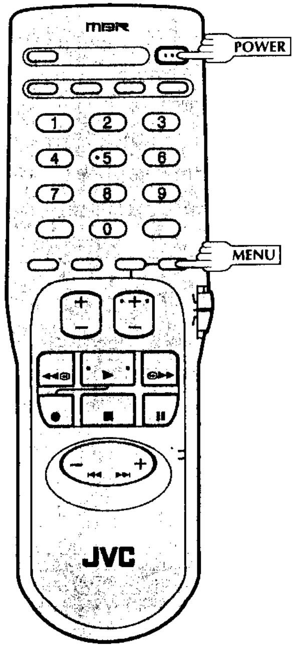
You can now set up the VCR Plus+ feature (☞ pg. 20).

CABLE BOX BRAND LIST

BRAND	**CODE**
ARCHER	49, 52, 53, 54
CABLEVIEW	49, 53
CITIZEN	49, 53
CURTIS	9, 10, 62, 63
DIAMOND	52, 53, 54
EAGLE	30, 31, 32, 33, 34, 35, 36, 37
EASTERN	51
GC BRAND	49, 53
GEMINI	8, 56
GENERAL ELECTRIC	67
GENERAL INSTRUMENTS	1, 2, 3, 4, 5, 6, 7,8
HAMLIN	15, 16, 17,18
JERROLD	1, 2, 3, 4, 5, 6, 7, 8
MACOM, HITACHI	57, 58, 59
MAGNAVOX	30, 31, 32, 33, 34, 35, 43
MOVIETIME	44, 45, 46
NSC	44, 45, 46
OAK	19, 20, 21, 30, 47, 48
PANASONIC	24, 25, 26
PHILIPS	30, 31, 32, 33, 42
PIONEER	13, 14
PULSER	49, 53
RCA	24, 25, 26
REGAL	15, 16, 17, 18, 33
REGENCY	51
SAMSUNG	8, 13, 49, 50
SCIENTIFIC ATLANTA	9, 10, 62, 63
SIGMA	19, 20, 21
SL MARX	8, 13, 49, 50
SPRUCER	24, 25, 26
STARGATE	8, 13, 49, 50
SYLVANIA	29
TEKNIKA	68, 69
TELECAPTION	27
TELEVIEW	8, 13, 49, 50
TEXSCAN	28, 29
TOCOM	22, 23, 64, 65, 66
UNIKA	52, 53, 54
UNIVERSAL	38, 39, 40, 41
VIDEOWAY	11, 12, 60, 61
VIDEO TECH	55
VIDTER	55
VIEWSTAR	30, 31, 32, 33, 34, 35, 36, 37
ZENITH	11, 12, 60, 61

VCR Plus+ Setup





The VCR Plus+ timer programming system eliminates the need to input channel, date, start and stop time data when setting the timer record function. Simply key in the PlusCode number for the TV program you wish to record (found in most TV listings) and the VCR's timer is automatically programmed.

Depending on the TV or cable stations that you receive and the channel numbers that they are received on in your area, you may have to make certain changes in your VCR's "Guide Channel Set" menu to get proper results. Please read the following information carefully to find out which tasks you need to perform.

Before VCR Plus+ setup you must have performed the following procedures:

- Advanced Auto Clock Setting (☞ pg. 8)

OR

Clock setting (☞ pg. 9)

- Tuner setting (☞ pg. 13)
- Tuner and cable box setting if you receive your TV channels through a cable box (☞ pg. 16)

Channel Number Matching

Most TV listings have a chart indicating the "Guide Channel" number assigned to each station for purposes of VCR Plus+ programming. Check the chart in your TV listings and see if the Guide Channel numbers listed for the stations you receive are the same as the channel number on which each is received by your VCR or cable box.

****SPECIAL NOTES FOR CABLE SUBSCRIBERS****

- In many instances, cable TV stations have VCR Plus+ Guide Channel numbers that **DO NOT** match the number of the channel on which you receive the station. Check your TV listings, or contact your cable supplier for details.
- Many normal broadcast TV stations can be viewed on cable. Check your TV listing, or contact your cable supplier for details.

If the numbers match, go directly to "VCR Plus+ Timer Programming" (☞ pg. 38).

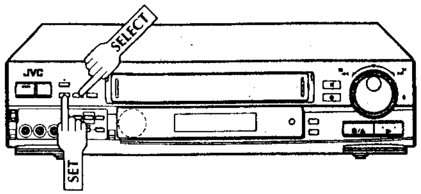
If the numbers are different, and you want to be able to timer record programs from those stations, you have to inform the VCR of the mismatch. Go to step **1**. If you will not want to timer record from those stations, you can go directly to "VCR Plus+ Timer Programming" (☞ pg. 38).

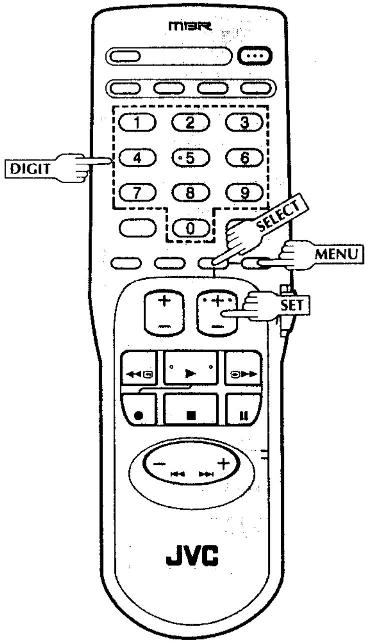
1 TURN ON THE VCR

Press **POWER**.

2 ACCESS MAIN MENU SCREEN

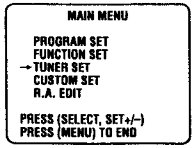
Press **MENU** as many times as necessary.





3 ACCESS TUNER SET SCREEN

Press **SET+/–** to place the arrow next to "TUNER SET", then press **SELECT**.



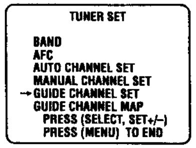
MAIN MENU

PROGRAM SET
FUNCTION SET
→TUNER SET
CUSTOM SET
R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

4 ACCESS GUIDE CHANNEL SET SCREEN

Press **SET+/–** to place the arrow next to "GUIDE CHANNEL SET", then press **SELECT**.

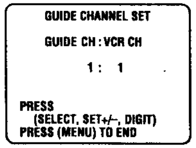


TUNER SET

BAND
AFC
AUTO CHANNEL SET
MANUAL CHANNEL SET
→GUIDE CHANNEL SET
GUIDE CHANNEL MAP
PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

5 INPUT GUIDE CHANNEL NUMBER

Press **SET+/–** or the appropriate **DIGIT** keys to input the Guide Channel number as shown in the TV listing. Then press **SELECT**.



GUIDE CHANNEL SET

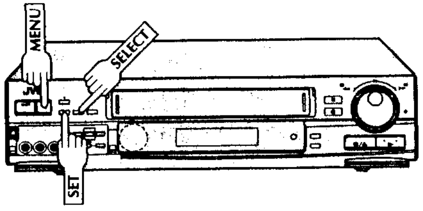
GUIDE CH : VCR CH

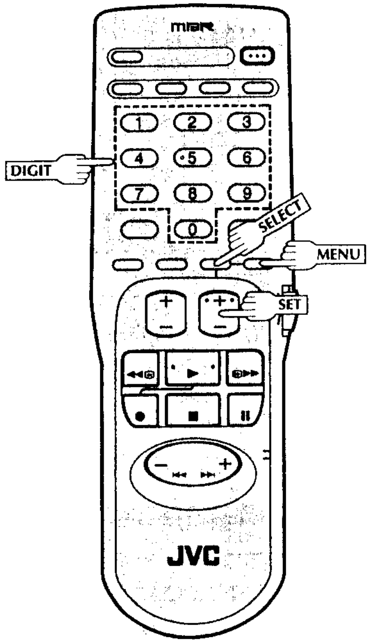
1 : 1

PRESS
(SELECT, SET+/–, DIGIT)
PRESS (MENU) TO END

- If you receive your channels with a cable box and if you have properly set your Cable Box Controller, "CABLE CH" appears in place of "VCR CH". If not, refer to pages 16–17 and re-perform the procedure.

CONTINUED ON NEXT PAGE.





6 INPUT RECEIVING CHANNEL NUMBER

Press **SET+/–** or the appropriate **DIGIT** keys to input the number of the channel on which the Guide Channel's broadcasts are received. Then press **SELECT**.

- If there is more than one mismatch, repeat steps **5** and **6** for each instance.

7 RETURN TO TUNER SET SCREEN

Press **MENU**.

8 CHECK INPUT DATA

Press **SET+/–** to place the arrow next to "GUIDE CHANNEL MAP", then press **SELECT**.

```
        TUNER SET

   BAND
   AFC
   AUTO CHANNEL SET
   MANUAL CHANNEL SET
   GUIDE CHANNEL SET
 → GUIDE CHANNEL MAP
     PRESS (SELECT, SET+/–)
     PRESS (MENU)  TO END
```

```
     GUIDE CHANNEL MAP

 GUIDE : VCR     GUIDE : VCR
     6 : 47        10 : 55
    12 : 41        15 : 38
    33 : 28        67 : 49

   PRESS (SELECT) TO NEXT
   PRESS (MENU) TO END
```

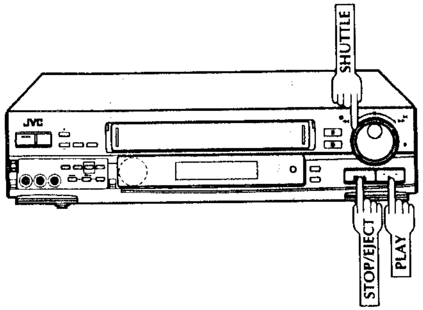
- The Guide Channel and VCR or cable box channel numbers you input appear on the screen in ascending order. Check to ensure you've entered them correctly.
- If you entered more than 10 sets of numbers, press SELECT to see the next set of numbers.
- Guide Channel Map contains only the Guide Channels and VCR channels that you entered. (Guide Channels 90 through 99 may be included even if you did not enter them; this has no effect on actual operation.)

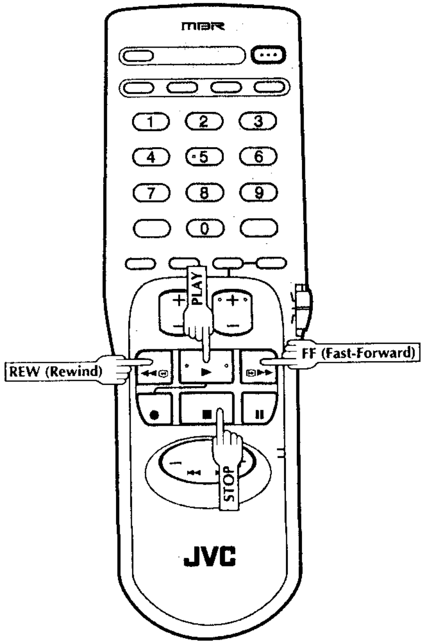
9 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

You can now use VCR Plus+ for quick and simple timer programming (☞ pg. 38).

Simple Playback





1 LOAD A CASSETTE

Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointing towards the VCR. Don't apply too much pressure when inserting.

- The VCR's power comes on automatically.
- The counter is automatically reset to "0H 00M 00S".
- If the cassette's record safety tab has been removed, playback begins automatically.

2 FIND PROGRAM START POINT

If the tape is advanced past the start point, press **REW** or turn the **SHUTTLE** ring to the left and release it.
To go forward, press **FF** or turn the **SHUTTLE** ring to the right and release it.

3 START PLAYBACK

Press **PLAY**.

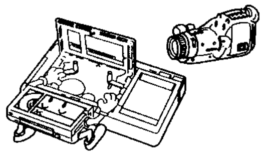
4 STOP PLAYBACK

Press **STOP** or **STOP/EJECT**. Then press **STOP/EJECT** to remove the cassette.

Usable cassettes

Full-Size VHS
T-30 (ST-30**)
T-60 (ST-60**)
T-90
T-120 (ST-120**)
T-160 (ST-160**)
ST-210**

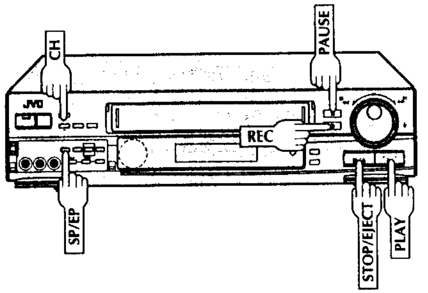
Compact VHS*
TC-20 (ST-C20**)
TC-30 (ST-C30**)
TC-40 (ST-C40**)

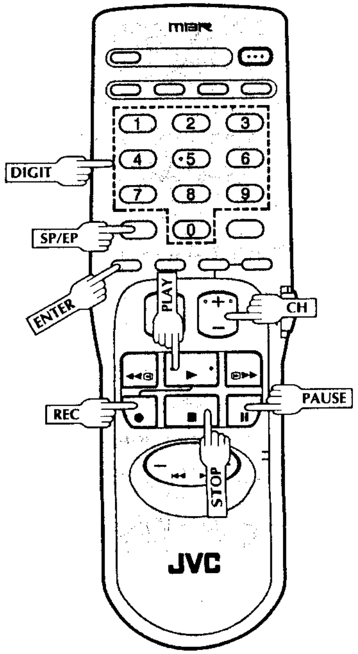


* Compact VHS camcorder recordings can be played on this video recorder. Simply place the recorded cassette into a VHS Cassette Adapter and it can be used just like any full-sized VHS cassette.

** This VCR can record on regular VHS and Super VHS cassettes. While only VHS signals can be recorded on regular VHS cassettes, both VHS and Super VHS signals can be recorded and played back using Super VHS cassettes.

Simple Recording





1
LOAD A CASSETTE

Make sure the record safety tab is intact. If not, cover the hole with adhesive tape before inserting the cassette.

2
SELECT RECORDING CHANNEL

Press **CH+/–**. Or press the appropriate **DIGIT** keys, then press **ENTER**. (The channel changes after a few seconds whether you press **ENTER** or not.)

3
SET TAPE SPEED

Press **SP/EP** to set the recording speed.

4
START RECORDING

Press and hold **REC** and press **PLAY** on the remote control, or press **REC** on the VCR's front panel.

5
PAUSE/RESUME RECORDING

Press **PAUSE**. Press **PLAY** to resume recording.

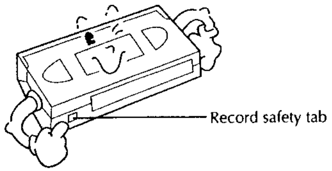
- During record pause, you can change the recording channel by using the **CH+/–** buttons or **DIGIT** keys.

6
STOP RECORDING

Press **STOP** or **STOP/EJECT**. Then press **STOP/EJECT** to remove the cassette.

Accidental erasure prevention

- To prevent accidental recording on a recorded cassette, remove its record safety tab.
  To record on it later, cover the hole with adhesive tape.

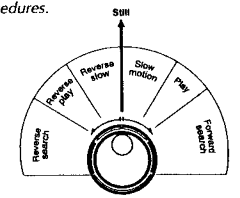


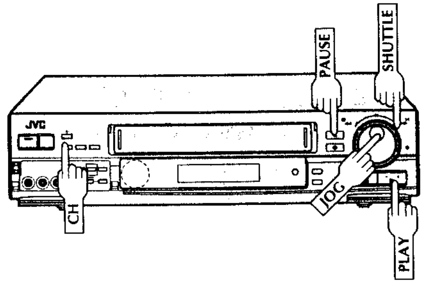
Playback

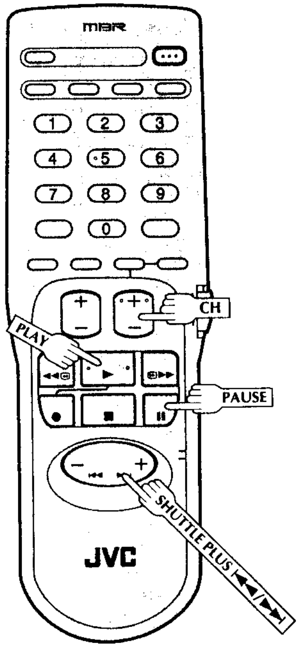
Take advantage of special functions possible with the recorder's controls or the remote control.

NOTE:

*Refer to the **SHUTTLE** ring illustration below as you read the following procedures.*







Still Picture/Frame-By-Frame Playback

1
PAUSE DURING PLAYBACK

Press **PAUSE**. If there is vertical jitter, use the **CH+** or – button to correct the picture.

2
ACTIVATE FRAME-BY-FRAME PLAYBACK

Turn the **JOG** dial to the right for forward frame-by-frame playback, or to the left for reverse frame-by-frame playback.

OR

Press **PAUSE** repeatedly to advance one frame at a time.

OR

Press **SHUTTLE PLUS** I◀◀ or ▶▶I repeatedly to advance one frame at a time.

To resume normal playback, press **PLAY**.

Slow Motion/Reverse Slow Motion

1
ACTIVATE SLOW-MOTION PLAYBACK

During playback or still, turn the **SHUTTLE** ring to the right for forward slow motion, or to the left for reverse slow motion (refer to the illustration above).

OR

During still picture, press and hold **SHUTTLE PLUS** I◀◀ or ▶▶I. Release to return to still picture.

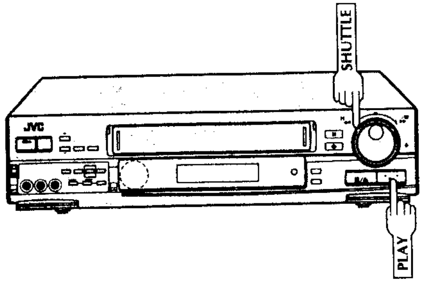
OR

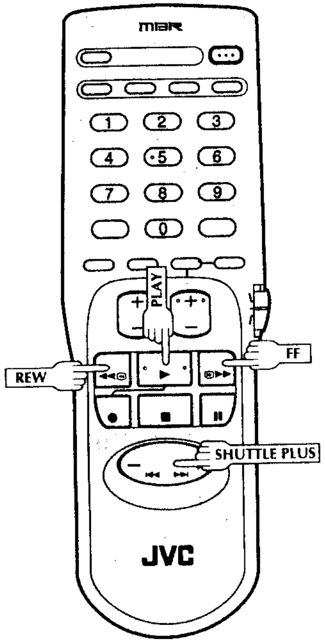
For hands-free slow-motion, press **SHUTTLE PLUS** I◀◀ during playback to decrease speed in the forward direction. To play in reverse slow-motion (and in reverse play mode), continue to press I◀◀ after selecting all the forward direction slow-motion modes.

OR

For forward slow motion during still picture, press and hold **PAUSE** for more than 2 seconds. Press **PAUSE** again to return to still picture.

To resume normal playback, press **PLAY**.





Variable-Speed Search/ Reverse Motion Playback

1

ACTIVATE VARIABLE-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring to the right for forward variable-speed search, or to the left for reverse variable-speed search (refer to the illustration on page 25).

OR

During playback, press **SHUTTLE PLUS** ⏮ or ⏭.

- To increase the speed in the forward direction, press ⏭.
- To decrease the speed in the forward direction, press ⏮.
- To play in reverse slow motion, and in reverse play mode, continue to press ⏮ after selecting all the forward slow motion modes.

To resume normal playback, press **PLAY**.

High-Speed Search

1

ACTIVATE HIGH-SPEED SEARCH

During playback or still, turn the **SHUTTLE** ring all the way to the right for forward high-speed search, or to the left for reverse high-speed search.

- For forward search with a visible picture, during playback or still turn the **SHUTTLE** ring all the way to the right and release it within 1 second.
- For reverse search with a visible picture, during playback or still turn the **SHUTTLE** ring all the way to the left and release it within 1 second.

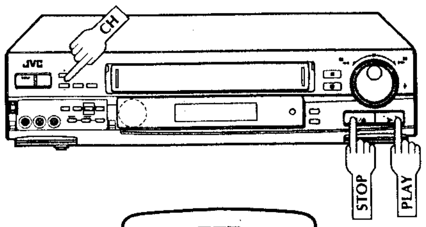
OR

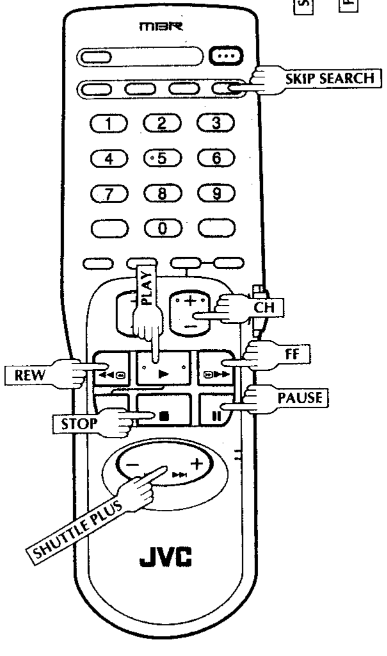
During playback or still press **FF** for forward high-speed search, or **REW** for reverse high-speed search.

To resume normal playback, press **PLAY**.

NOTE:

*For short searches, during playback or still press and hold **FF** or **REW** for over 2 seconds. When released, normal playback resumes.*



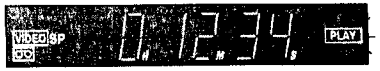


Repeat Playback

1

START REPEAT

Press and hold **PLAY** (until "PLAY" blinks on the front display panel) during playback, then release.



- The entire tape is played back 20 times.

2

STOP REPEAT

To stop, press **STOP** at any time.

NOTE:

*Pressing **PLAY, REW, FF, PAUSE** or **SHUTTLE PLUS** ⏮ or ⏭ also stops Repeat Playback.*

Manual Tracking

Once playback begins, the VCR's automatic tracking function is engaged. If noise appears in the picture, you can override this and make the adjustment manually.

1

ENGAGE MANUAL TRACKING MODE

During playback, press the **CH+/–** buttons on the VCR's front panel simultaneously to cancel the automatic tracking mode and enable manual tracking adjust.

2

ADJUST MANUAL TRACKING

Press **CH+/–** on the VCR's front panel or remote. Press lightly for fine adjust, or press and hold for coarse adjust. Watch the screen and continue adjusting until optimum picture and sound quality are achieved.

3

RE-ENGAGE AUTOMATIC TRACKING

Press the **CH+/–** buttons on the VCR's front panel simultaneously.

NOTE:

*Manual tracking is possible during hands-free slow-motion. During hands-free slow-motion playback simply press **CH** + or – on the VCR'S front panel or remote to adjust tracking.*

Skip Search

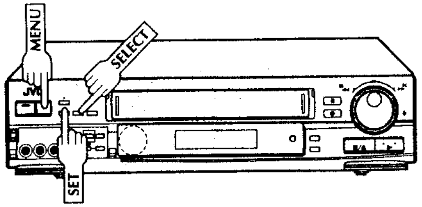
1

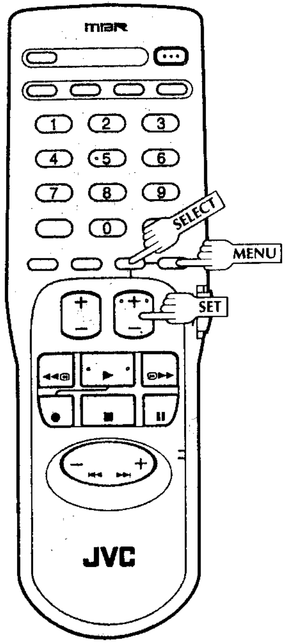
SKIP OVER UNWANTED SECTIONS

Press **SKIP SEARCH** 1 to 4 times during playback. Each press initiates a 30-second period of fast-motion playback. Normal playback resumes automatically.

NOTE:

*To return to normal playback during a Skip Search, press **PLAY**.*





Select The Soundtrack

Your VCR can record two soundtracks simultaneously (Normal and Hi-Fi) and play back the selected one, or both together.

1

ACCESS MAIN MENU SCREEN

Press **MENU** during playback or when VCR is in stop mode.

- If the VCR Plus+ screen appears press **MENU** again.

2

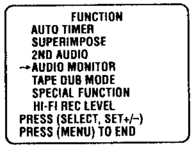
ACCESS FUNCTION SET SCREEN

Place the arrow next to "FUNCTION SET" by pressing **SET+/–**, then press **SELECT**.

3

ACCESS AUDIO MONITOR SCREEN

Place the arrow next to "AUDIO MONITOR" by pressing **SET+/–**, then press **SELECT**.



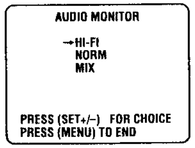
```
        FUNCTION
   AUTO TIMER
   SUPERIMPOSE
   2ND AUDIO
 →AUDIO MONITOR
   TAPE DUB MODE
   SPECIAL FUNCTION
   HI-FI REC LEVEL
 PRESS (SELECT, SET+/–)
 PRESS (MENU) TO END
```

4

SELECT MODE

You have three choices:
a– Hi-Fi
b– Normal
c– Mix

Place the arrow next to your choice by pressing **SET+/–**.



```
      AUDIO MONITOR

        →HI-FI
         NORM
         MIX



 PRESS (SET+/–)   FOR CHOICE
 PRESS (MENU) TO END
```

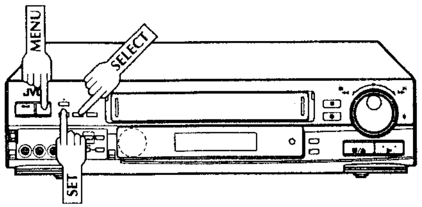
5

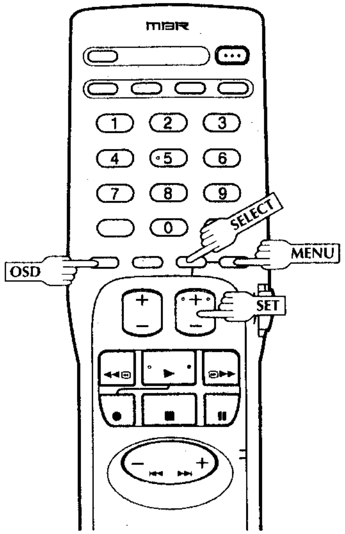
RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

NOTE:

If the tape being played back has no Hi-Fi soundtrack, the Normal soundtrack will be heard no matter what choice you make at the Audio Monitor screen.





To recall an indication

[1] Press **OSD**.
- All indications corresponding to the current status are displayed for 5 seconds, leaving the counter information, and RECORD/PAUSE if in the Record Pause mode, on the screen. (No indication during still and search.)

[2] Press **OSD** again to clear the display.

Superimpose

This function, switchable between ON and OFF, determines whether or not operational indicators will appear on screen.

1

ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

2

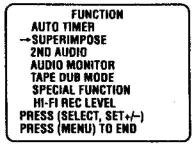
ACCESS FUNCTION SET SCREEN

Place the arrow next to "FUNCTION SET" by pressing **SET+/–**, then press **SELECT.**

3

ACCESS SUPERIMPOSE SCREEN

Place the arrow next to "SUPERIMPOSE" by pressing **SET+/–**, then press **SELECT**.

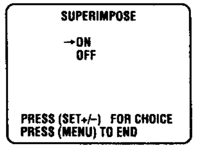


```
        FUNCTION
   AUTO TIMER
 →SUPERIMPOSE
   2ND AUDIO
   AUDIO MONITOR
   TAPE DUB MODE
   SPECIAL FUNCTION
   HI-FI REC LEVEL
 PRESS (SELECT, SET+/–)
 PRESS (MENU) TO END
```

4

SELECT MODE

Place the arrow next to "ON" or "OFF" by pressing **SET+/–**.



```
       SUPERIMPOSE

        →ON
         OFF



 PRESS (SET+/–)   FOR CHOICE
 PRESS (MENU) TO END
```

5

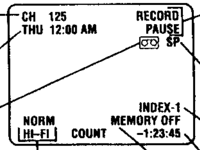
RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

NOTE:

If you engage the Record Pause mode, RECORD/PAUSE is displayed whether "SUPERIMPOSE" is set to "ON" or "OFF".

The superimposed indication on the TV screen tells you what the VCR is doing.



Tuned-in channel or AUX(iliary) mode
When the channel is changed, the new channel is displayed on the screen for 5 seconds.

Clock time

"Cassette Loaded" mark
When a cassette is loaded, the mark is displayed for 5 seconds. It blinks when the VCR's EJECT button is pushed.

Audio mode indicators

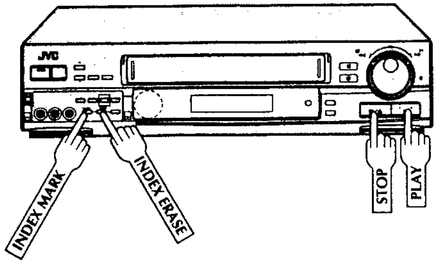
Operation mode
When the operation mode is changed, the new mode is displayed — RECORD (5 sec.), PLAY (5 sec.), FF/REW (5 sec. when engaged from Stop mode), RECORD PAUSE (for as long as Pause is engaged), and ITR *:** (5 sec.).

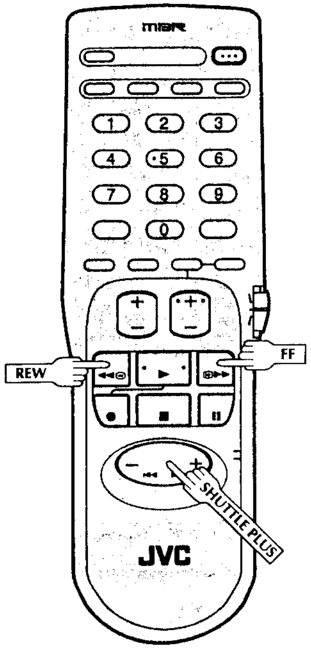
Tape speed indicator

INDEX indication

Counter reading

Counter memory on/off





Index Search

This function seeks out index codes that are placed on the tape at recording start.

1 START SEARCH

While the tape is stopped, press **SHUTTLE PLUS |◀◀** or **▶▶|**.

2 ACCESS DISTANT CODE

To access a recording 2–9 index codes away, press **SHUTTLE PLUS |◀◀** or **▶▶|** repeatedly until the correct number is displayed on screen (only if SUPERIMPOSE is set to ON (☞ pg. 29). Playback begins automatically when the desired recording is located.

- To find the very beginning of the desired program, press **REW** or **FF** and search visually for the start point.

NOTE:

An index code is not placed on the tape when recording is paused and then resumed.

Manual Index Mark/Erase

To mark an index code...

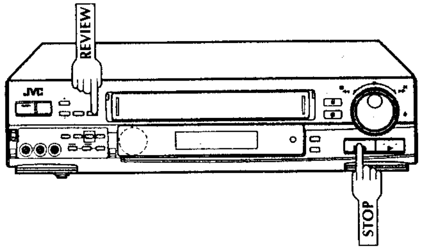
...during playback press **INDEX MARK** on the VCR.

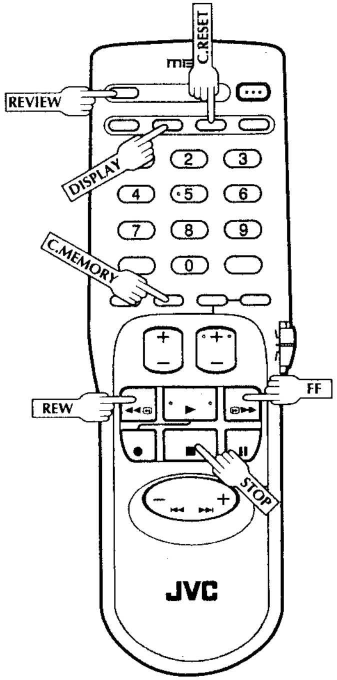
- The VCR will mark an index code at that location.
- If "SUPERIMPOSE" is set to ON (☞ pg. 29), "MARK" blinks on the screen while an index code is being marked.

To erase an index code...

...during playback or still press **INDEX ERASE** on the VCR.

- The VCR will fast-forward to the nearest index code and erase it. Playback continues after the index code is erased.
- If "SUPERIMPOSE" is set to ON (☞ pg. 29), "ERASE" blinks on the screen while an index code is being erased.





Instant ReView

At the press of a button, you can power up your VCR, rewind the tape and begin viewing the most recent timer-recorded program.

1 ACTIVATE INSTANT REVIEW

After ensuring that the VCR is off and the Timer mode is disengaged, press **REVIEW.**

- The power comes on and the VCR searches for the index code indicating the start of the last timer-recorded program, then begins playback automatically.
- You can access a program 2–9 index codes away from the current position on the tape. If, for example, you have 5 programs recorded and you want to watch the third one, press **REVIEW** three times.
- The VCR's REVIEW button lights when timer-recording is finished, and blinks while the tape is being rewound.
- To find the very beginning of the desired program, press **REW** or **FF** and search visually for the program's start point.

Counter Reset

1 RESET COUNTER TO ZERO

Press **C.RESET.**

NOTE:

*By pressing the **DISPLAY** button, you can change the display to show the counter reading, channel number, clock time or tape remaining time. (Channel number is not displayed during playback.)*

Counter Memory

When activated, this feature returns the tape to counter position "zero".

1 ACTIVATE COUNTER MEMORY

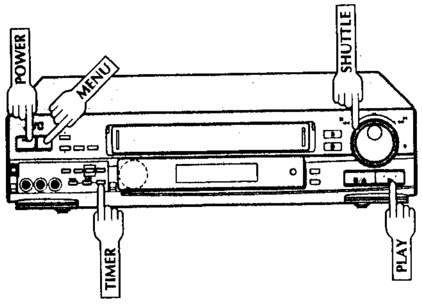
Press **C.RESET** during playback at a point you want to have quick access to later. The counter reads "0H 00M 00S".

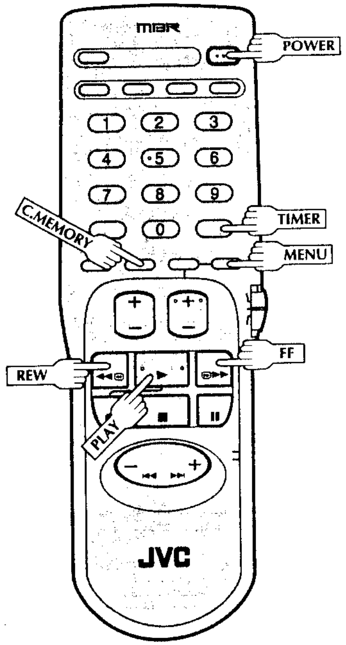
Then press **C.MEMORY**. The Counter Memory indicator in the front display panel lights.

2 RETURN TO COUNTER POSITION ZERO

Press **STOP** (during playback), then press **REW** or **FF**. The tape rewinds or fast-forwards and stops at approximately "0H 00M 00S" automatically.

- To cancel Counter Memory, press **C.MEMORY**.





Next-Function Memory

The Next Function Memory "tells" the VCR what to do after rewinding. * Before continuing, ensure that the VCR is in stop mode.

a– For Automatic Start Of Playback After Tape Rewind . . .
. . . press **REW**, then press **PLAY** within 2 seconds.
b– For Automatic Power Off After Tape Rewind . . .
. . . press **REW**, then press **POWER** within 2 seconds.
c– For Automatic Timer Standby After Tape Rewind . . .
. . . press **REW**, then press **TIMER** within 2 seconds.

NOTES:

- *To do the above using the VCR's controls: During Stop, turn the **SHUTTLE** all the way to the left and release it instead of pressing **REW**, and then press **PLAY**, **POWER** or **TIMER** within 2 seconds.*
- *If you want the "next function" to automatically start when the counter reads "0H 00M 00S" (instead of at the beginning of the tape), press **C. MEMORY** so that the counter memory indicator appears on the front display panel before pressing **REW** or **FF**.*

AV COMPU LINK Playback

Your VCR is compatible with JVC's AV COMPU LINK components, including amplifiers (or receivers) and televisions. AV COMPU LINK provides one touch control of the audio and video components that are linked via their AV COMPU LINK connectors.

For example: simply load a cassette in the VCR and press **PLAY** and the AV COMPU LINK components automatically power on, the TV's VIDEO mode is selected and the VCR goes into play mode. (PLAY need not be pressed if the cassette's record safety tab is removed.)

1 MAKE CONNECTION

Connect your VCR to an AV COMPU LINK component as shown in the illustration on page 33.

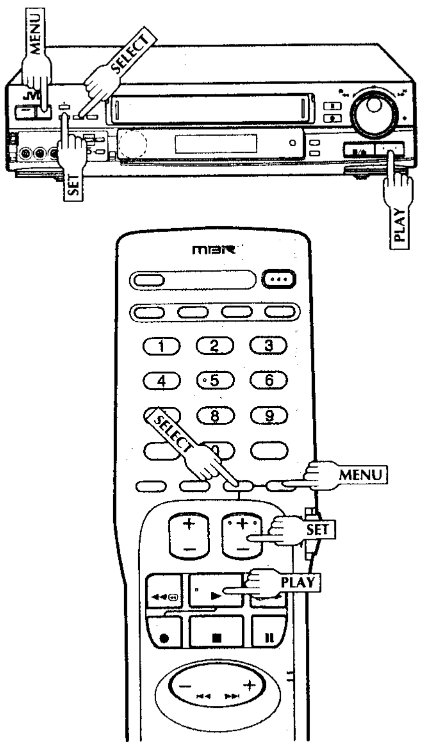
- The mini-plug cable is a mono 3.5 mm mini-plug to mono 3.5 mm mini-plug connector.

2 TURN ON THE VCR

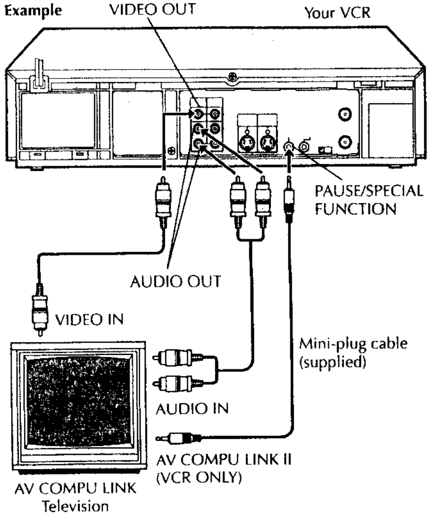
Press **POWER**.

3 ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.



Example

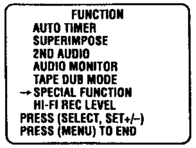


4 ACCESS FUNCTION SET SCREEN

Press **SET+/–** to place the arrow next to "FUNCTION SET", then press **SELECT**.

5 ACCESS SPECIAL FUNCTION SCREEN

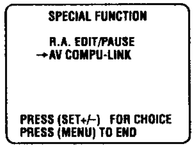
Press **SET+/–** to place the arrow next to "SPECIAL FUNCTION", then press **SELECT**.



FUNCTION
AUTO TIMER
SUPERIMPOSE
2ND AUDIO
AUDIO MONITOR
TAPE DUB MODE
→SPECIAL FUNCTION
HI-FI REC LEVEL
PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

6 ENABLE AV COMPU LINK PLAYBACK

Press **SET+/–** to place the arrow next to "AV COMPU LINK".



SPECIAL FUNCTION

R.A. EDIT/PAUSE
→AV COMPU-LINK

PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

7 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

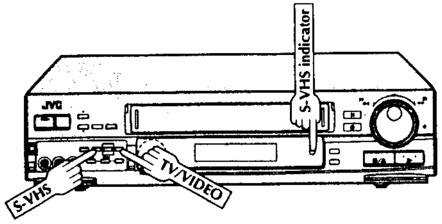
8 PERFORM AV COMPU LINK PLAYBACK

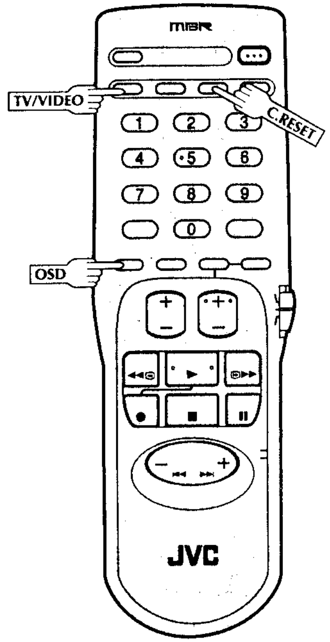
Simply insert a cassette and press **PLAY** (if the cassette's record safety tab has been removed, playback begins automatically). Linked components are turned on, and the TV set to its VIDEO mode, automatically!

NOTE:

Connection varies depending on the type of JVC TV you have. Please refer to the TV's instruction manual when making this connection.

Recording





Record One Program While Watching Another

1 ENGAGE TV MODE

During recording...

- Press **TV/VIDEO**. The VCR's VIDEO indicator goes out. (If you are using the RF connection (☞ pg. 6). to view the output from your VCR, the TV broadcast being recorded disappears.)
- If you are using the AV connection (☞ pg. 6) or S-VIDEO connection (☞ pg. 7), to view the output from your VCR, change the TV's input mode from AV to TV.

2 SELECT CHANNEL FOR VIEWING

Use the TV's channel selector to set the channel you want to watch.

Display Elapsed Recording Time

1 RESET COUNTER TO ZERO

Before recording starts, press **C.RESET.** The counter resets to zero and displays the exact elapsed time as the tape runs.

2 DISPLAY ELAPSED TIME ON SCREEN

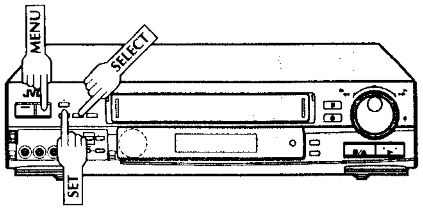
During recording, press **OSD** at any time to see the elapsed time. All indications corresponding to the current status of the VCR are displayed for 5 seconds. The counter display remains on the screen indicating the elapsed time. Press **OSD** again to remove the display.

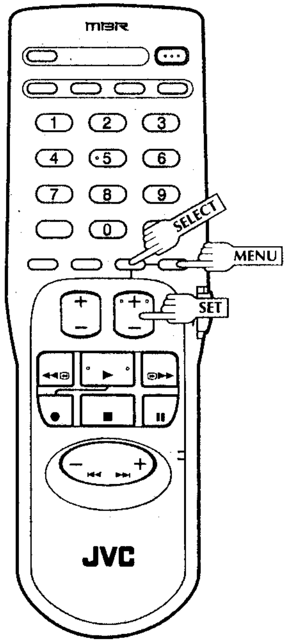
- Make sure "SUPERIMPOSE" is set to "ON" (☞ pg. 29).

S-VHS (Super VHS) and VHS

Your VCR can record in either S-VHS or VHS.

- To record in S-VHS, insert a cassette marked "S-VHS". The S-VHS indicator will light and the S-VHS recording mode is automatically selected.
- To record in VHS, insert a cassette marked "VHS". The VHS recording mode is automatically selected.
- You can also record in VHS on S-VHS cassettes. To do this, after inserting an S-VHS cassette, press the **S-VHS** button. The S-VHS indicator will go out.





Stereo And SAP (Second Audio Program)

Your VCR's built-in MTS decoder enables reception of Multi-channel TV Sound broadcasts.

- The ST indicator on the front display panel lights during stereo broadcast reception, and SAP lights during SAP program reception.
- Both indicators light when a stereo program is accompanied by SAP audio.

To Record Stereo Programs . . .
. . . simply follow the basic recording procedure.

To Listen To Stereo Soundtrack During Recording . . .
. . . select "HI-FI" at the Audio Monitor screen (☞ pg. 28).

To Record SAP Programs . . .

1 ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

2 ACCESS FUNCTION SET SCREEN

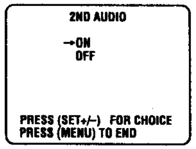
Place the arrow next to "FUNCTION SET" by pressing **SET+/–**, then press **SELECT**.

3 ACCESS 2ND AUDIO SCREEN

Place the arrow next to "2ND AUDIO" by pressing **SET+/–**, then press **SELECT**.

4 SELECT MODE

Place the arrow next to "ON" by pressing **SET+/–**.


2ND AUDIO

→ON
OFF

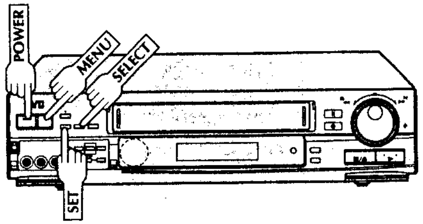
PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

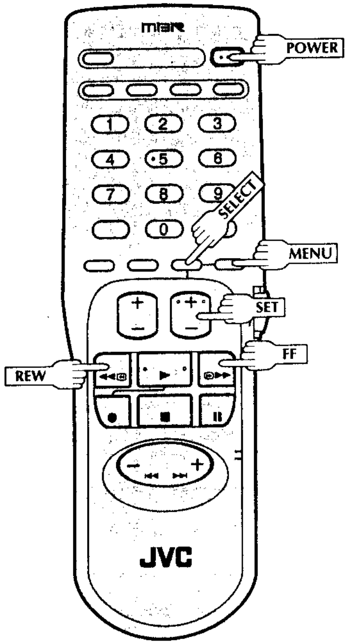
5 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

NOTES:

- *If a SAP program is received, the SAP audio is recorded on both the Normal and Hi-Fi tracks. The main audio program is not recorded.*
- *If a non-SAP program is received, the main audio is recorded on both the Hi-Fi and Normal audio tracks.*





Hi-Fi Audio Recording Level Control

Your VCR allows manual adjustment of the Hi-Fi audio recording level. Although the preset audio recording level is satisfactory for normal recording, if the sound you are going to record is too loud or too low, adjust the audio recording level while referring to the VCR's audio level meters.

1

TURN ON THE VCR

Press **POWER**.

2

ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

3

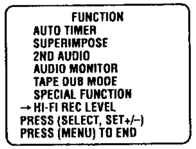
ACCESS FUNCTION SET SCREEN

Press **SET +/–** to place the arrow next to "FUNCTION SET", then press **SELECT**.

4

ACCESS HI-FI REC LEVEL SCREEN

Press **SET +/–** to place the arrow next to "HI-FI REC LEVEL", then press **SELECT**.

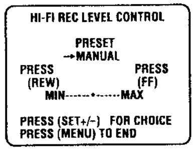


FUNCTION
AUTO TIMER
SUPERIMPOSE
2ND AUDIO
AUDIO MONITOR
TAPE DUB MODE
SPECIAL FUNCTION
→HI-FI REC LEVEL
PRESS (SELECT, SET+/–)
PRESS (MENU) TO END

5

SELECT MODE

Place the arrow next to "MANUAL" by pressing **SET +/–**.



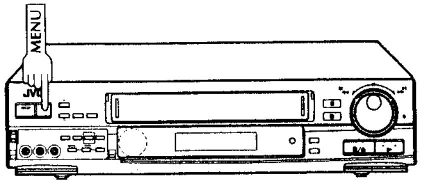
HI-FI REC LEVEL CONTROL
PRESET
→MANUAL
PRESS (REW) MIN------•------MAX PRESS (FF)
PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

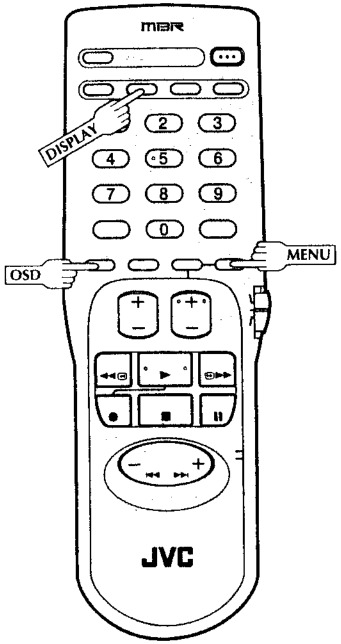
6

ADJUST AUDIO RECORDING LEVEL

Press **FF** or **REW**.

- To move the on-screen's audio levels by one division of the scale, press **FF** or **REW** briefly for 5 times in succession. To move the audio levels faster, keep **FF** or **REW** presssed.
- Adjust the recording level so that the audio level meters reach from 0dB to 4dB at the maximum sound volume.





7

RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary to exit.

NOTE:

- *Noise will increase if the recording level is too low, while distortion will increase if the level is too high.*

Display Tape Remaining Time

1

DISPLAY COUNTER INFORMATION

Press **OSD**.

2

DISPLAY TAPE REMAINING TIME

Press **DISPLAY** until "REMAIN" appears on screen. The approximate tape remaining time appears on the TV screen and VCR display panel.

- The tape remaining time is calculated based on the tape speed (SP or EP) being used. The indicated remaining time is only an estimate.
- By pressing **DISPLAY**, you can change the indication on the display panel to show the counter reading, channel number, clock time or tape remaining time.

3

EXIT THE DISPLAY

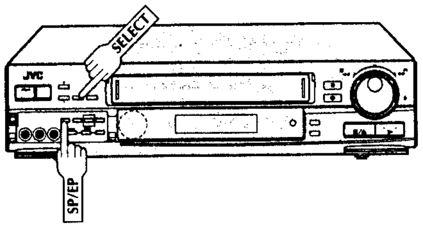
Press **OSD** again.

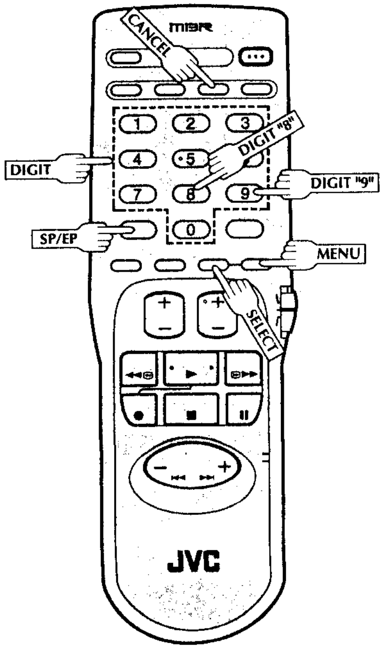
NOTES:

- *"SUPERIMPOSE" must be set to "ON", or the on-screen display will not appear (☞ pg. 29).*
- *Near the beginning of the tape, this estimate may be inaccurate. However, as the tape is used and the amount of remaining tape decreases, the estimate becomes more accurate.*
- *The tape remaining time indication is not accurate when using VHS-C tapes with VHS-C adapter.*

VCR Plus+ Timer Programming

Before VCR Plus+ Timer programming, see "VCR Plus+ Setup" on page 20.





Timer recording allows you to program the VCR to automatically record a program which will be broadcast at some future time. The timer record function can be programmed using VCR Plus + or On-Screen Timer Programming (☞ pg. 40).

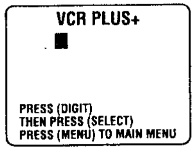
1 LOAD A CASSETTE

Make sure the record safety tab is present.

- The VCR's power comes on automatically.

2 ACCESS VCR PLUS+ SCREEN

Press **MENU** on the remote control.



```
VCR PLUS+
 ■

PRESS (DIGIT)
THEN PRESS (SELECT)
PRESS (MENU) TO MAIN MENU
```

- The clock must be set in order to access the VCR Plus+ screen. If you haven't set the clock, the Main Menu screen appears when you press **MENU**. Refer to page 8 for the Advanced Auto Clock Set procedure or page 9 for the clock setting procedure.

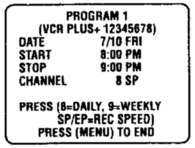
3 ENTER PLUSCODE NUMBER

Press the appropriate **DIGIT** keys to enter the PlusCode number printed in the TV listings for the TV program you wish to record.

- To make corrections, press **CANCEL** and input the correct PlusCode number.
- If the PlusCode number you input is incorrect, "ERROR" may appear on the screen to advise you of the error. This happens when the PlusCode number is for a program which has already passed. "ERROR" is displayed for about 4 seconds and the VCR Plus+ screen reappears (step **2**).

4 CHECK INPUT DATA

Press **SELECT** and the Program screen appears. The PlusCode number you entered appears in the Program screen. Check to make sure it's accurate.

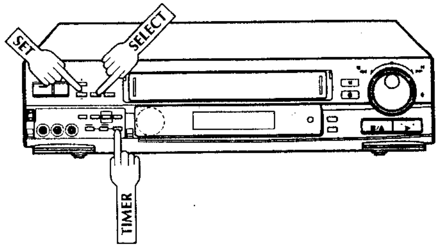


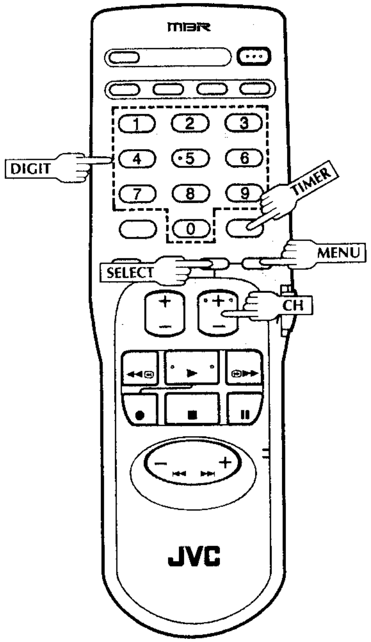
```
        PROGRAM 1
  (VCR PLUS+ 12345678)
DATE              7/10 FRI
START             8:00 PM
STOP              9:00 PM
CHANNEL              8 SP

PRESS (8=DAILY, 9=WEEKLY
      SP/EP=REC SPEED)
  PRESS (MENU) TO END
```

- To timer-record daily or weekly serials, press **DAILY** (**DIGIT** "8") or **WEEKLY** (**DIGIT** "9"). "DAILY" or "WEEKLY" appears on the Program screen.
- For weekly recording, the desired date for the day of the week must be entered.
- If you made a mistake, press **CANCEL** and, after pressing **MENU** as many times as necessary to access the VCR Plus+ screen, input the correct PlusCode number.

5 SET TAPE SPEED

Press **SP/EP**.





6 CHECK/CORRECT INPUT DATA

If the data is correct as it is, go to step **7**. If not, press **SELECT** until the item you want to change begins to blink. Then press the **SET +/–** to obtain the desired setting.

7 RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

- Press just once to access the Auto Timer screen (☞ pg. 43).

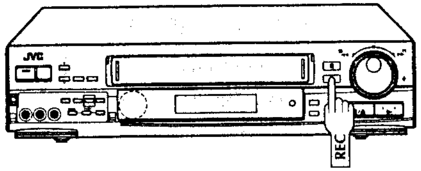
8 ENGAGE TIMER MODE

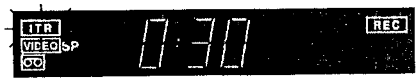
Press **TIMER**. The VCR turns off automatically.

NOTES:

- *To disengage the timer before recording starts, press* ***TIMER*** *again. Pressing once more re-engages it.*
- *In case of a power failure after programming, the VCR's memory backup keeps your selections for approximately 60 minutes.*
- *When timer-recording cable channels received through a Cable Box, be sure to keep the Cable Box set to ON.*

Instant Timer Recording (ITR)





This easy method lets you record for from 30 minutes to 9 hours (selectable in 30-min. increments), and shuts the VCR off after recording is finished.

1

START RECORDING

Press **REC** on the front panel.

2

ENGAGE ITR MODE

Press **REC** again. ITR blinks and 0:30 appears on the front display panel.

3

SET RECORDING DURATION

If you want to record for more than 30 minutes, press **REC** to extend the time. Each press extends recording time by 30 minutes.

NOTES:

- *You can only perform ITR using the **REC** button on the VCR's front panel.*
- *After you set the time, the previous display reappears.*
- *To check the remaining time, press **REC** once during recording and the remaining time will be displayed for about 5 seconds. Be careful not to press **REC** again within these 5 seconds, or you will round the recording time up to the next 30 minute increment.*

On-Screen Timer Programming

• Refer to the illustration on page 41.

You can directly program the VCR's timer to record up to 8 shows, as far as a year in advance. Remember, the clock must be set before you can program the timer (☞ pg. 8 or 9).

1

LOAD A CASSETTE

Make sure the record safety tab is intact. If not, cover the hole with adhesive tape, then load.

- The VCR comes on, and the counter is reset, automatically.

2

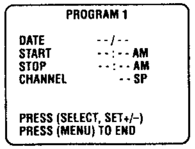
ACCESS ON-SCREEN MENU

Press **MENU** as many times as necessary to bring up the Main Menu screen.

3

ACCESS PROGRAM SET SCREEN

Make sure the arrow is to the left of "PROGRAM SET", then press **SELECT**.

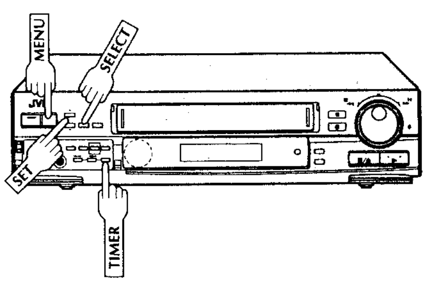


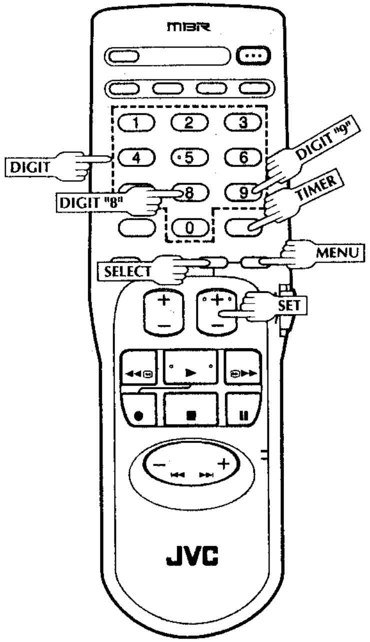
```
          PROGRAM 1

DATE          --/--
START         --:--AM
STOP          --:--AM
CHANNEL         --SP

PRESS (SELECT, SET+/-)
PRESS (MENU) TO END
```

4

SELECT PROGRAM NUMBER

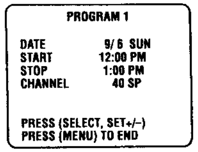
Press **SET +/–** to select a vacant program number, then press **SELECT**. The first time you do this, all numbers will be vacant, so just press **SELECT** when the screen appears.





EXAMPLE

If you program the VCR to timer record a show on September 6 on channel 40 from 12:00 noon to 1:00 PM in SP mode, the screen will look like this:



```
          PROGRAM 1

DATE           9/6 SUN
START         12:00 PM
STOP           1:00 PM
CHANNEL          40 SP

PRESS (SELECT, SET+/-)
PRESS (MENU) TO END
```

5

SET PROGRAM INFORMATION

Press **SET +/–** to set the month, then press **SELECT**. The day display begins blinking. Repeat the procedure to set the day, start time, stop time, channel and tape speed. To set the channel you can also use the **DIGIT** keys.

- Do not use the **SET** – button to set the date.

** You can record selected programs at the same time every weekday, or once a week. Before entering the month or day, press **DIGIT** key **"8"** (DAILY) or **"9"** (WEEKLY). Either "DAILY" or "WEEKLY" appears. Press again and "DAILY" or "WEEKLY" disappears.

6

MAKE CORRECTIONS

To change any of the settings, press **SELECT** until the item you want to change begins blinking. Then set as in step **5**.

7

RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

- Press just once to access the Auto Timer screen (☞ pg. 43).

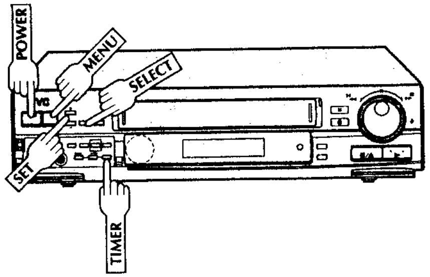
8

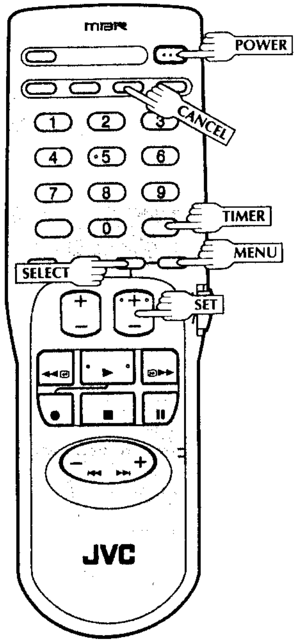
ENGAGE TIMER MODE

Press **TIMER**. The VCR turns off automatically.

NOTES:

- *To disengage the timer before recording starts, press **TIMER** again. Pressing once more re-engages it.*
- *In case of a power failure after programming, the VCR's memory backup keeps your selections for approximately 60 minutes.*
- *If you select "PROGRAM SET" without having set the date and time, an error message appears. Follow its instructions.*
- *If you enter a start time that has already passed, "ERROR" appears on the screen and flashes.*
- *Programs that start after midnight must have the next day's date.*
- *After timer recording is completed, the VCR's power goes off automatically.*
- *You can program the timer while a regular recording is in progress; the on-screen menu will not be recorded.*
- *If the end of tape is reached during timer recording, the cassette is automatically ejected.*
- *When timer-recording cable channels received through a Cable Box, be sure to keep the Cable Box set to ON.*





Check And Cancel Programs

1

DISENGAGE TIMER

Press **TIMER**, then press **POWER**.

2

ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

3

ACCESS PROGRAM SET SCREEN

Press **SET +/–** to place the arrow next to "PROGRAM SET", then press **SELECT**.

4

CHECK PROGRAM INFORMATION

Press **SET +/–** to check the programs in succession.

To Cancel A Program . . .

5

CANCEL A PROGRAM

Press **CANCEL**.

- Repeat steps **4** and **5** as many times as necessary.

6

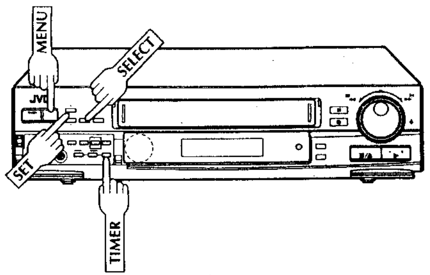
RETURN TO NORMAL SCREEN

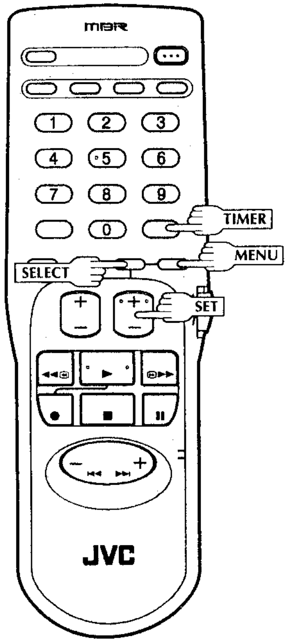
Press **MENU** as many times as necessary. If there are still programs remaining, go to step 7.

7

RE-ENGAGE TIMER

Press **TIMER** again.





Auto Timer

When the Auto Timer is set to ON the timer is automatically engaged when the VCR's power is turned off and automatically disengaged when the VCR is powered back on.

1

ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

2

ACCESS FUNCTION SET SCREEN

Place the arrow next to "FUNCTION SET" by pressing **SET +/–**, then press **SELECT**.

3

ACCESS AUTO TIMER SCREEN

Place the arrow next to "AUTO TIMER" by pressing **SET +/–**, then press **SELECT**. Now skip to step **2** of the procedure below.

Or, during on-screen timer programming ...

1

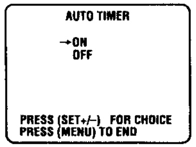
ACCESS AUTO TIMER SCREEN

In step 7 in the VCR Plus+ Timer Programming procedure (☞ pg. 39) or in step **7** in the On-Screen Timer Programming procedure (☞ pg. 41), press **MENU**.

2

SELECT MODE

Place the arrow next to your choice ("ON" or "OFF") by pressing **SET +/–**.



```
AUTO TIMER

→ON
 OFF

PRESS (SET+/-) FOR CHOICE
PRESS (MENU) TO END
```

3

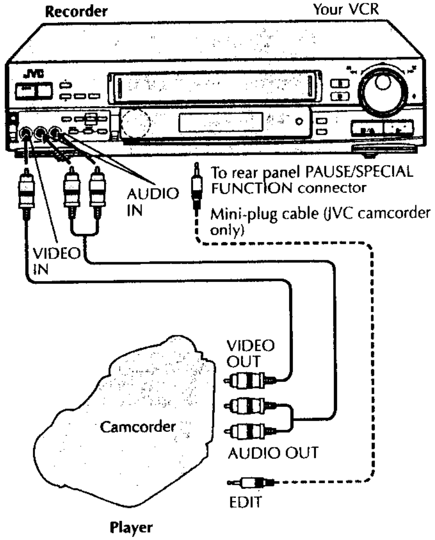
RETURN TO NORMAL SCREEN

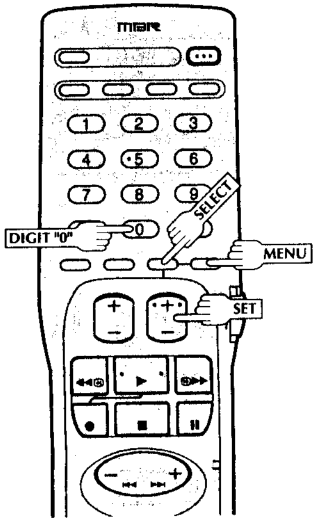
Press **MENU** as many times as necessary.

NOTE:

*For safety, when AUTO TIMER is set to "OFF", all other VCR functions are disabled while the Timer mode is engaged. To disengage the timer, press **TIMER**.*

Edit From A Camcorder


Recorder
Your VCR
AUDIO IN
To rear panel PAUSE/SPECIAL FUNCTION connector
Mini-plug cable (JVC camcorder only)
VIDEO IN
VIDEO OUT
Camcorder
AUDIO OUT
EDIT
Player



You can use a camcorder as the player and your VCR as the recorder.

1

MAKE CONNECTIONS

Connect an AV cable between the camcorder's VIDEO OUT and AUDIO OUT connectors and your VCR's VIDEO IN and AUDIO IN connectors.

- When a Master Edit Control-equipped JVC camcorder is used, the camcorder is capable of controlling your VCR. The mini-plug cable is a mono 3.5 mm mini-plug to mono 3.5 mm mini-plug connector.
- If connecting to a camcorder with a monaural output, connect the audio output connector on the camcorder to the AUDIO IN L of the VCR.

2

LOAD A CASSETTE

Insert the cassette to be recorded on into the recorder.

3

SET RECORDER'S INPUT MODE

Press **DIGIT** key "0" to set to AUX.

4

ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary.

5

ACCESS FUNCTION SET SCREEN

Press **SET +/–** to place the arrow next to "FUNCTION SET", then press **SELECT**.

*If you're using a JVC Master Edit Control-equipped camcorder — step **6***
*If not — step **9***

6

ACCESS SPECIAL FUNCTION SCREEN

Press **SET +/–** to place the arrow next to "SPECIAL FUNCTION", then press **SELECT**.

7

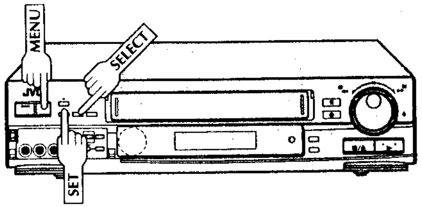
SELECT MODE

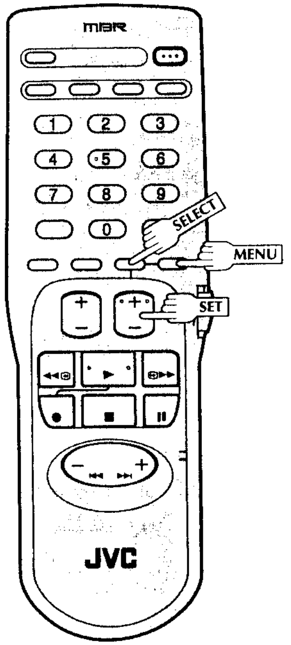
Press **SET +/–** to place the arrow next to "R.A. EDIT/ PAUSE".

SPECIAL FUNCTION

→R.A. EDIT/PAUSE
AV COMPU-LINK

PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END





8

RETURN TO FUNCTION SET SCREEN

Press **MENU**.

9

ACCESS TAPE DUB MODE SCREEN

Press **SET +/–** to place the arrow next to "TAPE DUB MODE", then press **SELECT**.

10

SELECT MODE

Place the arrow next to "ON" by pressing **SET +/–**.

TAPE DUB MODE

→ON
OFF

PRESS (SET+/–) FOR CHOICE
PRESS (MENU) TO END

11

RETURN TO NORMAL SCREEN

Press **MENU** as many times as necessary.

12

START PLAYER

Set the camcorder to its play mode.

NOTE:

If the camcorder is equipped with a superimpose/OSD disable feature then set its superimpose or display feature to OFF before pressing play.

13

START RECORDER

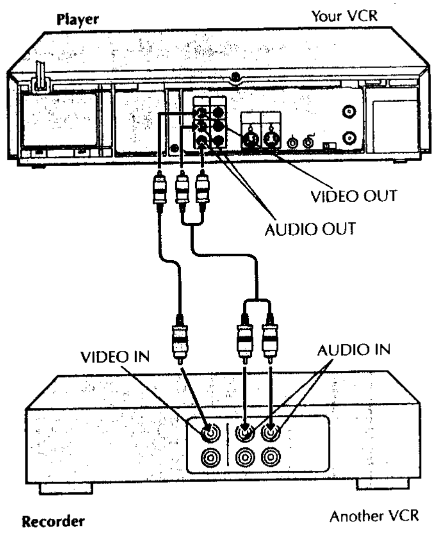
Set your VCR to its record mode.

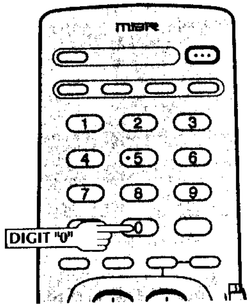
- If you are using a Master Edit Control-equipped JVC camcorder, it can put the recorder automatically into Record mode. (Refer to camcorder's instruction manual.)

NOTE:

- *Connections made to the front panel VIDEO and AUDIO inputs automatically override any rear panel VIDEO/AUDIO or S-VHS input connections. If you wish to edit with another machine connected to the rear input connectors, make sure that there is nothing connected to the front connectors.*

Edit To Or From Another VCR





You can use your VCR as the player or the recorder.

1 MAKE CONNECTIONS

Connect an AV cable between the player's VIDEO OUT and AUDIO OUT connectors and the recorder's VIDEO IN and AUDIO IN connectors.

- When using your VCR as the recorder and a monaural VCR as the player, connect the player's AUDIO OUT connector to the AUDIO IN L connector on the recorder.

2 LOAD CASSETTES

Insert the playback cassette into the player and the cassette to be recorded on into the recorder.

3 ENGAGE TAPE DUBBING MODE

Follow steps 4, 5, 9–11 from the "Edit From A Camcorder" section (☞ pg. 44)

4 SET RECORDER'S INPUT MODE

Set to AUX. With this VCR, press **DIGIT** key "**0**" (AU appears on the front display panel in place of a channel number).

5 START PLAYER

Set to its play mode.

NOTE:

If the player is equipped with a superimpose/OSD disable feature then set "SUPERIMPOSE" to OFF before pressing ***PLAY*** *(☞ pg. 29).*

6 START RECORDER

Set to its record mode.

NOTE:

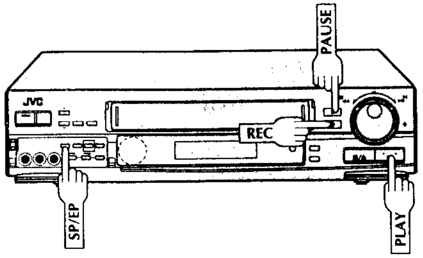
- *Connections made to the front panel VIDEO and AUDIO inuts automatically override any rear panel VIDEO/AUDIO or S-VHS input connections. If you wish to edit with another machine connected to the rear input connectors, make sure that there is nothing connected to the front connectors.*

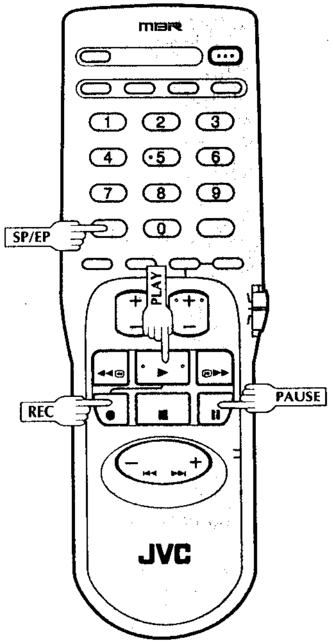
Advantages Of S-VHS VCRs

You can edit from VHS to S-VHS, from S-VHS to VHS, or from S-VHS to S-VHS.

- From VHS to S-VHS (VIDEO-VIDEO connection): Record VHS playback signals in the S-VHS mode. Although the picture quality is inherently limited by that of the original, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to VHS (VIDEO-VIDEO connection): Because the picture quality of the source material is very high, the edited tape has better picture quality than those made by VHS-to-VHS editing.
- From S-VHS to S-VHS (S-VIDEO connection): All signals will be transferred without degradation.

Assemble Editing





Assemble Editing adds one recorded scene to another in succession.
To use your VCR as the recorder ...

1 LOAD CASSETTES

Insert the original cassette in the player, and the recording cassette in the recorder.

2 SET TAPE SPEED

Set to "SP" or "EP" by pressing the **SP/EP** button.

3 ENGAGE TAPE DUBBING MODE

Follow steps 4, 5, 9–11 from the "Edit From A Camcorder" section (☞ pg. 44)

4 ENGAGE RECORD-STANDBY MODE

Press and hold **PAUSE**, and press **REC**.

5 FIND EDIT START POINT

Play back the original tape until you reach the scene to be edited.

6 START EDITING

When you reach the scene on the original tape to be edited, press **PLAY** to initiate the recorder's record mode.

7 STOP EDITING

Press **PAUSE** to pause the tape in the recorder.

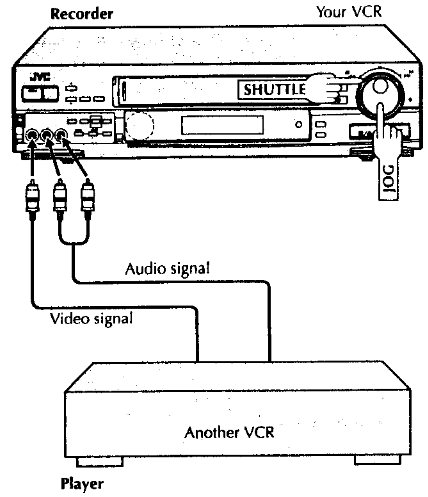
8 CONTINUE EDITING

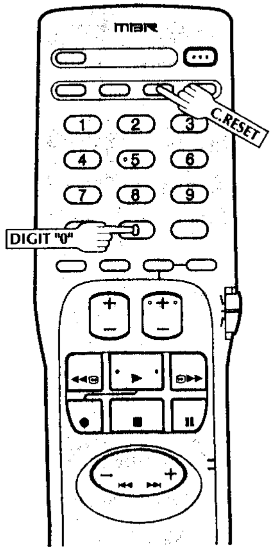
Repeat steps **5** through **7** to add additional scenes.

NOTE:

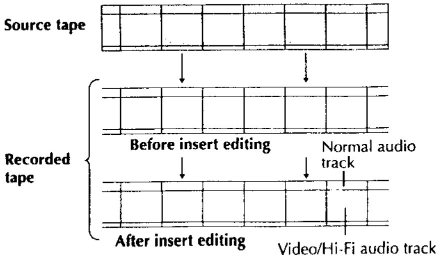
Assemble Editing is also possible using your VCR as the playback deck.

Insert Editing





Insert editing replaces part of the recorded scene with new material. Both the picture and Hi-Fi audio soundtrack are replaced with new ones, while the normal audio soundtrack remains unchanged. If you wish to change the normal audio track as well, use the audio dubbing function simultaneously. Use your VCR as the recorder.



1

MAKE CONNECTIONS

Connect the player's VIDEO OUT and AUDIO OUT connectors to your VCR's VIDEO IN and AUDIO IN on the front panel.

2

SET INPUT MODE

Press **DIGIT** key "0". "AU" appears in place of a channel number.

3

ENGAGE TAPE DUBBING MODE

Follow steps 4, 5, 9–11 from the "Edit From A Camcorder" section (☞ pg. 44)

4

LOCATE END POINT

Load the recording cassette into your VCR, and play it back to determine the edit-out point (the end of the segment to be replaced) using the **JOG/SHUTTLE** controls.

- Releasing the **JOG/SHUTTLE** controls engages the Still mode .

5

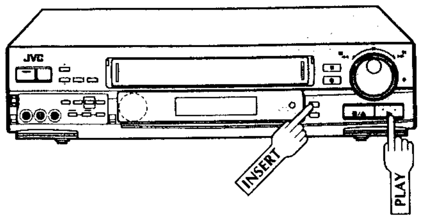
RESET THE COUNTER

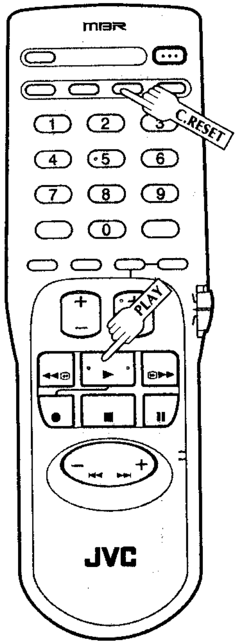
Press **C.RESET** to change the counter display to "0H00M00S".

6

LOCATE START POINT

Determine the edit-in point (the beginning of the segment to be replaced) using the **JOG/SHUTTLE** controls.





7

ENGAGE INSERT EDITING

Press **INSERT**.

- Your VCR enters the Insert-Pause mode. (REC, PLAY and PAUSE light up on the front display panel.)
- The TV screen changes from the still picture to the input source you are going to record.

8

START EDITING

Load the source cassette into another VCR and play back the segment that is to be inserted. When you reach the start of section of source tape that you wish to insert, press **PLAY** to start the tape in your VCR; Insert Editing begins at this point.

- PLAY and REC are displayed on the front display panel.

9

END INSERT EDITING

At counter "0H00M00S", Insert Editing will stop automatically while the tape continues running in the Play mode. if you wish to stop Insert Editing before the specified edit-out point, press **C.RESET**.

FOR AV INSERT EDITING

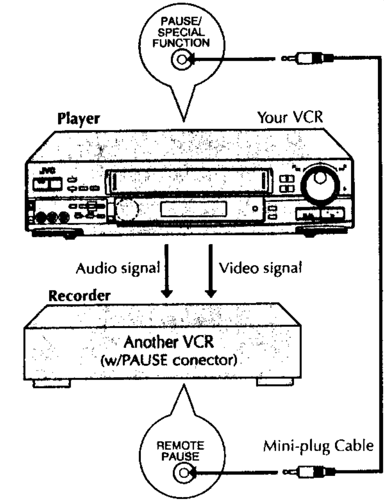
If you want to replace the picture, Hi-Fi audio soundtrack and normal audio soundtrack all at the same time...
In step 7 above, after you press **INSERT**, press **A. DUB.** also.
(REC and PLAY blink and PAUSE lights up on the display panel.)

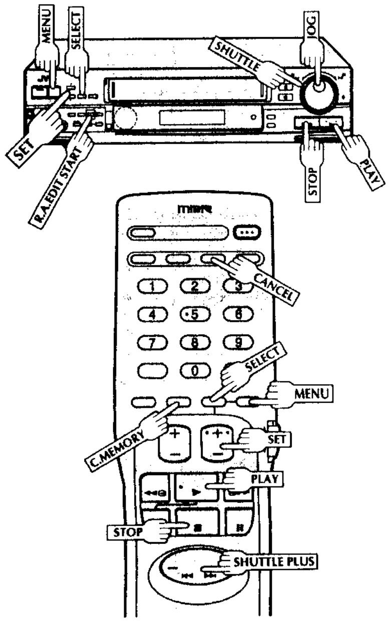
NOTES:

- *Suitable leads can be obtained from your dealer.*
- *Insert editing is not possible with cassettes whose safety tab has been removed.*
- *In insert editing, the recording speed (SP/EP) is determined by the previous recording to be replaced. If the previous recording's speed changes within a single edit, the inserted picture will be distorted at the switching point.*
- *A small portion of the recording which precedes an insert edit may become erased.*
- *Insert Editing is also possible using the rear connectors.*
- *Connections made to the front panel VIDEO and AUDIO inputs automatically override any rear panel VIDEO/AUDIO or S-VHS input connections. If you wish to edit with another machine connected to the rear input connectors, make sure that there is nothing connected to the front connectors.*

Random Assemble Editing

This function makes it easier to create edited videos when your VCR is used as the source player in combination with another VCR equipped with a Remote PAUSE Connector. You can pre-program up to 8 scenes or "cuts" for automatic editing in the sequence you have specified.





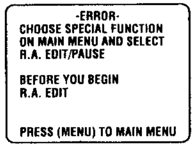
1 MAKE CONNECTIONS

Connect your VCR's VIDEO OUT and AUDIO OUT connectors to the VIDEO IN and AUDIO IN connectors on the recording deck, and connect your VCR's PAUSE/SPECIAL FUNCTION connector to the PAUSE connector on the recording deck.

- If the recording deck doesn't have a PAUSE connector, connect to the R.A. EDIT connector instead.
- The Mini-plug cable is a mono 3.5 mm mini-plug to mono 3.5 mm mini-plug connector.

2 PREPARE FOR EDITING

Perform steps **2** – **11** on page 44, "Edit From A Camcorder".



```
-ERROR-
CHOOSE SPECIAL FUNCTION
ON MAIN MENU AND SELECT
R.A. EDIT/PAUSE

BEFORE YOU BEGIN
R.A. EDIT

PRESS (MENU) TO MAIN MENU
```

NOTE:

*If you mistakenly select "AV COMPU LINK" in step 7 on page 44, an error message appears when you finish step **6**. Make sure "R.A. EDIT/PAUSE" is selected before you continue.*

3 LOAD SOURCE CASSETTE

Insert the source cassette into your VCR.

4 START SOURCE PLAYBACK

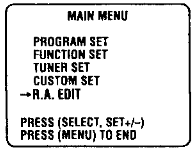
Press **PLAY**.

5 ACCESS MAIN MENU SCREEN

Press **MENU** as many times as necessary to bring up the Main Menu screen.

6 ACCESS R.A. EDIT SCREEN

Place the arrow next to "R.A. EDIT" by pressing **SET +/–**, then press **SELECT**.

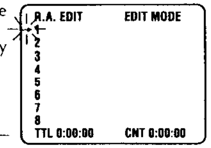


```
MAIN MENU

  PROGRAM SET
  FUNCTION SET
  TUNER SET
  CUSTOM SET
→R.A. EDIT

PRESS (SELECT, SET+/–)
PRESS (MENU) TO END
```

- The screen is superimposed on the video playback in step 7.

7 LOCATE EDIT-IN POINT

Find the point on the source tape from where you want the edited scene to begin by pressing **SHUTTLE PLUS I◀◀ ▶▶I**, or **JOG/SHUTTLE** then press **SELECT**.

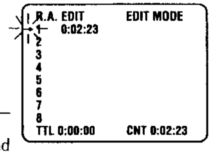


```
R.A. EDIT        EDIT MODE
1
2
3
4
5
6
7
8
TTL 0:00:00      CNT 0:00:00
```

- The edit-in point is registered in memory and appears on the screen.
- You can also perform an Index Search (if index marks have been previously recorded on the tape at the desired points ☞ pg. 30) to find the points you want, but this will result in reduced accuracy.

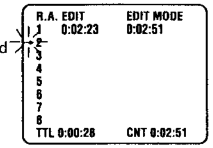
8 LOCATE EDIT-OUT POINT

Find the point where you want the edited scene to end by pressing **SHUTTLE PLUS I◀◀ ▶▶I**, or **JOG/SHUTTLE** then press **SELECT**.



```
R.A. EDIT        EDIT MODE
1    0:02:23
2
3
4
5
6
7
8
TTL 0:00:00      CNT 0:02:23
```

- The edit-out point is registered in memory and appears on the screen.
- The total time of the edited scenes is displayed to the right of "TTL".
- Repeat steps 7 and **8** for each additional scene.



```
R.A. EDIT        EDIT MODE
1    0:02:23     0:02:51
2
3
4
5
6
7
8
TTL 0:00:28      CNT 0:02:51
```

9 PREPARE RECORDING DECK

Engage its Record-Standby mode.

10 START R.A. EDIT

Press **R.A. EDIT START** on the VCR or **C.MEMORY** on the remote control.

- Automatic editing begins; all the specified scenes are copied to the recording deck in the order they were registered.
- The on-screen display remains while your VCR searches for each scene (blinking cursor indicates scene currently being searched for), but disappears during actual editing.
- During scene search, the recording deck automatically enters its Record-Standby mode. "SEARCHING" appears on the screen.
- When all registered scenes have been edited, your VCR enters the Still mode, the recording deck enters its Record-Standby mode, and the cursor blinks at the next available number.

11 END R.A. EDIT

Press **MENU** as many times as necessary to return to the normal screen, and engage the Stop mode for the both VCRs.

NOTES:

- *You can also monitor the sound when searching for scenes you want to edit in steps 7 – **8**. Since you can hear the soundtrack during selection, you can avoid abrupt or unnatural sounding scene-to-scene transitions.*
- *When editing, there may be a discrepancy of about 2 seconds on the source tape between the locations you chose as edit-in/-out points and the locations the VCR recognizes as those points.*
- *There are no limitations for R.A. Edit list (such as repeat segments, negative counter values, segments out of order). Only the start-stop sequence has to be in the normal play direction.*
- *For any scene, the edit-out point must have a counter reading that is at least 1 second after the corresponding edit-in point. Any less than 1 second and the edit-out point will not be registered.*
- *Since the source VCR prerolls during Random Assemble Editing, there must be at least 15 seconds worth of recorded material prior to any edit-in point on the source tape.*
- *If the search time for an edit-in point exceeds 5 minutes, the recording deck enters its Stop mode and editing will not take place.*

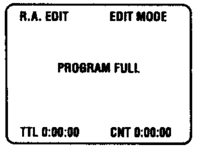
To Make Corrections . . .

. . . during step 7 or **8**, you can cancel registered in and out points by pressing **CANCEL** on the remote control. Each time you press, the preceding point is erased.

- If, for example, you have registered 5 sets of in and out points and want to reset the first set, you have to press **CANCEL** until all points after the first set have been erased. Reenter them after you've repaired the first set of points.

Memory Capacity

Random Assemble Editing shares memory space with the VCR's timer. If there are programs occupied by timer-recording data, those spaces cannot be used to register edit-in and -out points — meaning you won't be able to edit 8 scenes.



```
R.A. EDIT        EDIT MODE

       PROGRAM FULL

TTL 0:00:00      CNT 0:00:00
```

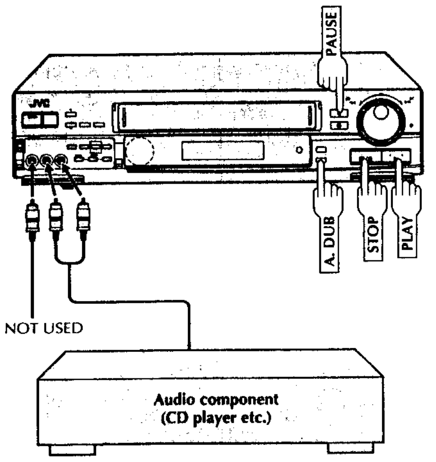
- When all 8 programs are full, "PROGRAM FULL" appears on the R.A. EDIT screen.
- To cancel a program, see page 42.

RM-V403U Multi-Brand R.A. Edit Controller (Not supplied)

By connecting this controller to your VCR's R.A. EDIT connector, you can perform Random Assemble Editing in combination with a second non-JVC VCR. The controller is compatible with various major VCR brands. For compatible systems and availability, please consult your JVC dealer.

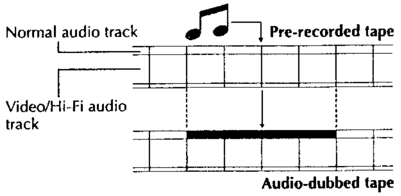
Audio Dubbing

Audio dubbing replaces the normal audio sound of a previously recorded tape with a new soundtrack. Use your VCR as the recorder.



NOTES:

- *When monitoring the sound during Audio Dubbing, the normal soundtrack is automatically selected. If you wish to hear the Hi-Fi or mixed sound (Hi-Fi + Normal soundtracks), refer to the "Select The Soundtrack" section (☞ pg. 28) and select the soundtrack you wish to hear.*
- *Audio dubbing stops automatically when the counter reaches "0H00M00S", and the VCR enters the Play mode. Check the counter reading before dubbing.*
- *Audio dubbing is also possible using the rear AUDIO IN connectors.*
- *Audio dubbing cannot be performed on a cassette that has had its record safety tab removed.*
- *When playing back an audio-dubbed tape, refer to the "Select The Soundtrack" section (☞ pg. 28) to select the soundtrack you wish to hear.*
- *It may be unlawful to record or play back copyrighted material without the consent of the copyright owner.*



1

MAKE CONNECTIONS

Connect an audio component to the AUDIO IN L + R and VIDEO IN connectors on the VCR's front panel. *When connecting monaural equipment, use only the VCR's AUDIO IN L connector.

- By connecting to the front panel VIDEO IN connector, the front panel connectors will automatically override any rear panel Video/Audio input connections.

2

SET INPUT MODE

Press **DIGIT** key "0" on the remote control. "AU" appears in place of a channel number.

3

LOCATE START POINT

Press **PLAY** to start playback of the tape in your VCR, and press **PAUSE** when you find the point where you want to start dubbing.

4

ENGAGE AUDIO DUBBING

Press **A. DUB**.

- Your VCR enters the Audio Dubbing Pause mode. (REC blinks, PLAY and PAUSE light up on the front display panel.)

5

START DUBBING

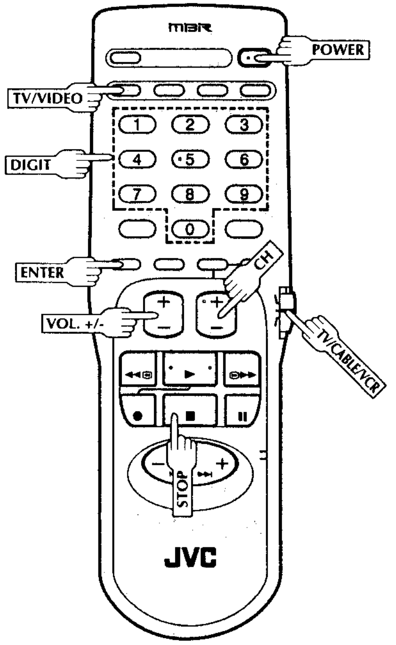
Engage the audio component's Play mode, then press **PLAY** to start the tape in your VCR. Audio dubbing begins at this point.

- REC blinks and PLAY is displayed on the front display panel.
- To stop dubbing temporarily, press **PAUSE**. Press **PLAY** to resume dubbing.

6

END AUDIO DUBBING

Press **STOP** to stop the tape in your VCR, and engage the audio component's Stop mode.



TV Multi-Brand Remote Control

The VCR's remote control can control several functions on JVC remote control TVs and on the brands of remote control TVs listed below.

1

TURN ON THE TV

Turn the power on using the TV's remote control.

2

SET REMOTE CONTROL MODE

Set the **TV/CABLE/VCR** switch on the VCR's remote control to TV.

3

SET TV BRAND CODE

Refer to the chart below. While holding down **POWER**, enter your TV's brand code using the **DIGIT** keys, then press **STOP**.

- Once you have set the remote control to operate the TV, you don't have to repeat this step until you replace your remote control's batteries.
- PANASONIC has two codes. If the TV does not function with one code, try entering the other.

4

OPERATE TV

First, press **POWER** on the remote to see if the TV's power goes off as it should. If it does, try other operations.

- The **POWER**, **TV/VIDEO**, **CH +/–**, **VOL +/–** and **DIGIT** keys on the remote can all be used to operate the TV.
- To return the remote to VCR control, set the **TV/CABLE/VCR** switch to **VCR**.

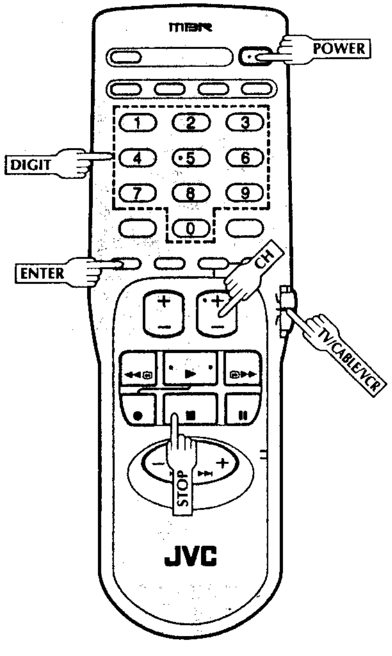
NOTE:

Depending on the kind of TV, there may be cases where some or all functions cannot be operated using the remote control.

TV BRAND NAME	BRAND CODE
JVC	01
MAGNAVOX	02
MITSUBISHI	03
PANASONIC	04, 11
RCA	05
SHARP	06
SONY	07
TOSHIBA	08
ZENITH	09
HITACHI	10
SAMSUNG	12
SANYO	13

Cable Box Multi-Brand
Remote Control

The VCR's remote control can control functions on the brands of cable boxes listed below. Some cable box brands have more than one code. If your cable box does not function with a specified code, try other codes.



1
TURN ON THE CABLE BOX
Turn the power on using the cable box's remote control.

2
SET REMOTE CONTROL MODE
Set the **TV/CABLE/VCR** switch on the VCR's remote control to **CABLE**.

3
ENTER CABLE BOX BRAND
While holding down **POWER**, use the **DIGIT** keys to enter the cable box brand number from the chart below and then press **STOP**.

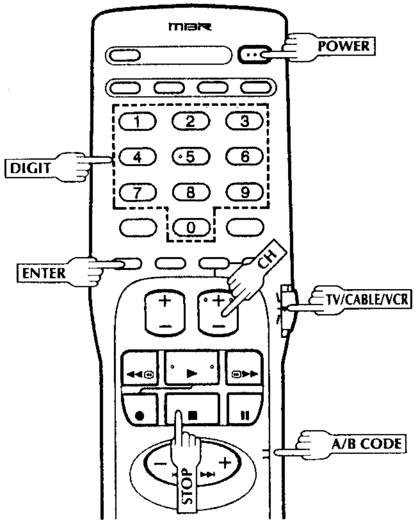
- Once you have set the remote control to operate the cable box, you don't have to repeat this step until you replace the remote control's batteries.

4
OPERATE CABLE BOX
First, press **POWER** to see if the cable box's power goes off as it should. If it does, try other functions (**CH +/–** and the **DIGIT** keys can be used to operate the cable box).

- For some brands of cable box, you must press **ENTER** after having pressed the **DIGIT** keys.
- To return the remote to VCR control, set the **TV/CABLE/VCR** switch to **VCR**.

NOTES:
- *You must set the cable box brand for your remote control and the cable box brand for your Cable Box Controller (☞ pg. 18) separately. The list of cable box brands that can be controlled by your remote control is different from the list of cable box brands that can be controlled by your cable box controller.*
- *It is possible that the remote control will not operate your cable box even if the cable box's channels automatically change during timer recording using the Cable Box Controller.*

CABLE BOX BRAND NAME	BRAND CODE
GENERAL INSTRUMENTS	01, 02, 03, 04, 05, 06, 07, 08
HAMLIN	15, 16, 17, 18
JERROLD	01, 02, 03, 04, 05, 06, 07, 08
OAK	19, 20, 21
PANASONIC	24, 25, 26
PIONEER	13, 14
RCA	24, 25, 26
REGAL	15, 16, 17, 18
SCIENTIFIC ATLANTA	09, 10
SIGMA	19, 20, 21
SPRUCER	24, 25, 26
TOCOM	22, 23
ZENITH	11, 12



Control Two JVC VCRs

The supplied remote control is capable of controlling two JVC VCRs independently using the **A/B CODE** switch. You can set this VCR so it responds to remote commands only when the switch is set to **B**, and another VCR so it responds to commands when the switch is set to **A**. The switch is preset to **A** because this VCR normally responds to A-code signals. You can easily modify this VCR to accept B-code commands.

1
UNPLUG VCR'S POWER CORD
Unplug from the AC outlet.

2
SET A/B CODE SWITCH
Set the **A/B CODE** switch on the remote control to B.

3
PLUG IN POWER CORD
Plug back in to the AC outlet.

4
TURN VCR POWER ON
Press **POWER** on the remote.

The VCR will now respond only to B-code commands.

DSS Receiver Multi-Brand
Remote Control

The VCR's remote control can control functions on the brands of DSS (Digital Satellite System) receivers listed below.

1
TURN ON THE DSS RECEIVER
Turn the power on using the DSS receiver's remote control.

2
SET REMOTE CONTROL MODE
Set the **TV/CABLE/VCR** switch on the VCR's remote control to **CABLE**.

3
ENTER DSS RECEIVER BRAND
While holding down **POWER**, use the **DIGIT** keys to enter the DSS receiver brand number from the chart below and then press **STOP**.

- Once you have set the remote control to operate the DSS receiver, you don't have to repeat this step until you replace the remote control's batteries.

4
OPERATE DSS RECEIVER
First, press **POWER** to see if the DSS receiver's power goes off as it should. If it does, try other functions (**CH +/–** and the **DIGIT** keys can be used to operate the DSS receiver).

- Depending on the DSS receiver you may have to press **ENTER** after having pressed the **DIGIT** keys.
- To return the remote to VCR control, set the **TV/CABLE/VCR** switch to **VCR**.

NOTE:
Depending on type of DSS receiver, there may be cases where some or all functions cannot be operated using the remote control.

DSS BRAND NAME	BRAND CODE
RCA	80
SONY	81

Before requesting service for a problem, use this chart and see if you can repair the trouble yourself. Small problems are often easily corrected, and this can save you the trouble of sending your VCR off for repair.

POWER

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The power won't come on.	● The power cord is disconnected.	Connect the power cord.
2. The clock works, but the VCR's power won't come on.	● The TIMER mode is engaged with Auto Timer set to "OFF" (☞ pg. 43).	Press **TIMER** to disengage.
3. The remote control won't function.	● The batteries are discharged. ● The **A/B CODE** switch is in the wrong position. ● The **TV/CABLE/VCR** switch is in the wrong position.	Replace the dead batteries with new ones. Re-perform the A/B Code setting (☞ pg. 55). Set the switch to the position corresponding with the unit you want to operate.

TAPE TRANSPORT

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The cassette gets stuck partway during loading, and is ejected.	● The cassette was inserted incorrectly.	Make sure the window side is up, the rear label side is facing you and the arrow on the front of the cassette is pointing towards the VCR. Then insert the cassette
2. The tape stops during rewind or fast forward.	● The Counter Memory indicator ("M") is lit on the front display panel.	Press **C.MEMORY** to disengage the Counter Memory mode and extinguish the indicator.

PLAYBACK

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. The tape is running but the picture won't appear.	● If you're using the RF OUT connection (☞ pg. 6), the channel selector on the TV is set incorrectly. ● If you're using the AV connection or S-VIDEO connection (☞ pg. 6 or 7), the TV receiver is set to the wrong mode.	Set the channel selector to channel 3 or 4. Set the TV receiver to its AV mode.
2. Noise appears during visual search.	● This is normal.	
3. Breaks are noticeable in Hi-Fi soundtrack.	● Automatic tracking is engaged.	Engage and adjust tracking manually (☞ pg. 27).
4. The playback picture is blurred or interrupted, even though TV broadcasts are clear.	● The video heads may be dirty.	The heads must be cleaned. Consult your JVC dealer (☞ pg. 64).
5. The Hi-Fi soundtrack cannot be heard.	● The AUDIO MONITOR option at the Function Set screen was set incorrectly.	Set AUDIO MONITOR to "HI-FI" (☞ pg. 28).

RECORDING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Recording won't start.	● There's no cassette loaded. ● The loaded cassette has had its record safety tab removed.	Insert a cassette. Remove the cassette and cover the hole with adhesive tape, or load a cassette on which the record safety tab is intact.
2. TV broadcasts won't record properly.	● The VCR has been set to its AUX mode by mistake.	Set the VCR to the appropriate channel.
3. Tape-to-tape editing won't work.	●The VCRs or the camcorder and the VCR have been incorrectly connected. ● The power to one or more of the units has not been turned on. ● The recorder's input mode has been set incorrectly.	Refer to the directions and the illustration under "Edit To Or From Another VCR" (☞ pg. 46) or "Edit From A Camcorder" (☞ pg. 44) and properly connect the units. Make sure the power to all units is on. Make sure nothing is connected to the front panel connectors if using a rear panel input connection.

TIMER RECORDING

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. Timer recording won't work.	● The clock and/or the timer have been set incorrectly. ● The timer is not engaged. ● The VCR has not been set up properly.	Check or re-perform the clock/timer settings to ensure correctness. Press **TIMER** and check to make sure that TIMER appears on the front display panel. Re-perform the set-up procedures. Make sure you have compensated for Guide Channel and VCR or cable box channel number mismatches (☞ pg. 20).
2. On-screen timer programming won't work.	● Timer recording is in progress.	Timer programming can't be performed when timer recording is in progress. Wait until it finishes.
3. TIMER and 📼 on the front display panel won't stop blinking.	● The timer is engaged but there's no cassette loaded.	Load a cassette with the record safety tab intact, or with the hole covered with adhesive tape.
4. The cassette is automatically ejected, and TIMER and 📼 on the front display panel won't stop blinking.	● The loaded cassette has had its record safety tab removed.	Remove the cassette and cover its hole with adhesive tape, or replace it with a cassette on which the safety tab is intact.
5. TIMER blinks for 10 seconds and the timer mode is disengaged.	● **TIMER** has been pressed when there are no programs in memory, or the timer record program information has not been programmed correctly.	Check the programmed data and re-program as necessary, then press **TIMER** again.
6. The cassette is automatically ejected, the power shuts off and TIMER and 📼 won't stop blinking.	● The end of tape was reached during timer recording.	The program may not have been recorded in its entirety. Next time make sure you have enough time on the tape to record the entire program.
7. Cable channels are not automatically switched during timer recording.	● The Cable Box Controller is not properly connected to the VCR. ● The output channel selected in the Cable Box Output screen is incorrect. ● The cable box's power is off.	Connect the Cable Box Controller correctly (☞ pg. 16). After confirming your cable box's output channel number, re-access the Cable Box Output screen and select the correct number (☞ pg. 18). Make sure the power is on before timer recording starts.

CONTINUED ON NEXT PAGE.

8. Timer recording begins as scheduled, but the channel is always incorrect.	• Even though you don't use an external Cable Box, "CABLE BOX OUTPUT" is set to "ON".	Set "CABLE BOX OUTPUT" to "OFF" (☞ pg. 17).
9. We moved, and now VCR Plus+ doesn't work properly.	• The receivable stations in the new area are received on different channels than those in the previous area.	Re-perform the VCR Plus+ setup procedure (☞ pg. 20).
10."PROGRAM FULL" is displayed on the VCR Plus+ screen.	• All 8 programs of the VCR's timer memory are used.	Wait until a space in memory clears, or cancel unnecessary program information (☞ pg. 42).

OTHER PROBLEMS

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
1. When scanning channels, some of them are skipped over.	• Those channels have been preset to be skipped.	If you need the skipped channels, restore them (☞ pg. 15).
2. The channel can't be changed.	• Recording is in progress.	Press **PAUSE** to pause the recording, change channels, then press **PLAY** to resume recording.
3. The remote control won't operate my TV.	• The **TV/CABLE/VCR** switch is set to a position other than TV.	Set the switch to TV.
4. The remote control won't operate my cable box.	• The **TV/CABLE/VCR** switch is set to a position other than CABLE.	Set the switch to CABLE.
5. Even though Auto or Semi-Auto clock setting has been selected, the clock is incorrect.	• The clock setting data received from the Host Channel is incorrect.	Select a different Host Channel during the Semi-Auto setting procedure (☞ pg. 10), or perform the Manual setting procedure (☞ pg. 11).

ATTENTION:
This recorder contains microcomputers. External electronic noise or interference could cause malfunctioning. In such cases, switch the power off and unplug the power cord. Then plug it in again and switch power on. Take out the cassette. After checking the cassette, operate the unit as usual.

PLAYBACK

Q. What happens if the end of the tape is reached during playback or search?
A. The tape is automatically rewound to the beginning.

Q. Can the VCR indefinitely remain in the still mode?
A. No. It stops automatically after 5 minutes to protect the heads.

Q. During search, slow, still and frame-by-frame playback, I can't hear any audio. What's the problem?
A. This is normal.

Q. During search, still and frame-by-frame playback, the picture is intermittent. What's the cause?
A. Picture loss occurs when these types of playback are attempted with a tape recorded in LP mode. Pressing **PLAY** to return to normal playback will restore the picture.

Q. When returning from multi-speed search to normal playback, the picture is disturbed. Should I be concerned about this?
A. No, it is normal.

Q. Noise bars appear during multi-speed search. What's the problem?
A. This is normal.

Q. Other than preventing further recording, what effect does removing the safety tab have?
A. It disables marking or erasing of index codes.

Q. Sometimes, during Index Search, the VCR can't find the program I want to see. Why not?
A. There may be index codes too close together.

Q. During playback, on-screen operational indicators sometimes jitter. Why does this happen?
A. If the condition of the tape being played back is not good, jittering of the video (including on-screen indicators) may occur.

RECORDING

Q. When I pause and then resume a recording, the end of the recording before the pause is overlapped by the new recording. Why does this happen?
A. This is normal. It reduces distortion at the pause and resume points.

Q. Can the VCR indefinitely remain in the Record-Pause mode?
A. No. The VCR automatically goes to its Stop mode after 5 minutes to protect the heads. When paused during Instant Timer Recording (ITR), the VCR shuts off automatically after 5 minutes.

Q. What happens if the tape runs out during recording?
A. The VCR automatically rewinds it to the beginning.

TIMER RECORDING

Q. REC and TIMER remain lit on the front display panel. Is there a problem?
A. No. This is a normal condition for a timer recording in progress.

Q. Can I program the timer while I'm watching a tape or a TV broadcast?
A. You won't see the picture as it is replaced by the on-screen menu, but the audio from the program or tape you're viewing is present.

GENERAL

Power requirement	: AC 120 V∿ , 60 Hz
Power consumption	: 26 W
Temperature	
Operating	: 5°C to 40°C (41°F to 104°F)
Storage	: –20°C to 60°C (–4°F to140°F)
Operating position	: Horizontal only
Dimensions (W x H x D)	: 400 x 94 x 341 mm (15-3/4" x 3-3/4" x 13-7/16")
Weight	: 4.5 kg (8.2 lbs)
Format	: S-VHS/VHS NTSC standard
Maximum recording time	
SP	: 210 min. with ST-210 video cassette
EP	: 630 min. with ST-210 video cassette

VIDEO/AUDIO

Signal system	: NTSC-type color signal and EIA monochrome signal, 525 lines/60 fields
Recording/ Playback system	: DA-4 (Double Azimuth) head helical scan system
Signal-to-noise ratio	: 45 dB
Horizontal resolution	: 240 lines (VHS) 400 lines (S-VHS)
Frequency range	
Normal audio	: 70 Hz to 10,000 Hz
Hi-Fi audio	: 20 Hz to 20,000 Hz
Input/Output	: RCA connectors (IN x 2, OUT x 1) S-VIDEO connectors (INx1, OUTx1)

TUNER

Tuning system	: Frequency-synthesized tuner
Channel coverage	
VHF	: Channels 2–13
UHF	: Channels 14–69
CATV	: 113 Channels
RF output	: Channel 3 or 4 (switchable; preset to Channel 3 when shipped) 75 ohms, unbalanced

TIMER

Clock reference	: Quartz
Program capacity	: 1-year programmable timer/ 8 programs
Memory backup time	: Approx. 60 min.

ACCESSORIES

Provided accessories	: RF cable (F-type), Infrared remote control unit, "AAA" battery x 2, Cable Box Controller, S-Video cable (4-pin), Audio/Video cable, Mini-plug cable

Specifications shown are for SP mode unless otherwise specified. E. & O.E. Design and specifications subject to change without notice.

List Of Terms

This guide serves as a quick way to locate frequently used terms and on-screen display names. The first page on which the term appears is listed. Most terms appear more than once in the instruction manual.

A

A/B Code 55
Add Channel 15
AFC 15
Audio Dubbing 52
Audio Monitor 28
Auto Channel Setting 14
Auto Clock Setting 11
Auto Daylight Saving Time 11
Auto Timer 43
Automatic Tracking 27
Aux Input 44
AV Compu Link Playback 32
AV Connection 6

B

Band 13

C

Cable Box 16
Cable Box Brand Setting 18
Cable Box Controller 16
Cancel Program 42
Cassette Adapter 23
Check Program 42
Connection to TV 6
Contents 5
Counter Memory 31
Counter Reset 31

D

Delete Channel 15

E

Editing 44

F

Frame-by-Frame Playback 25
Function Setting 28

G

Guide Channel Map 22
Guide Channel Setting 21

H

Host Channel Selection 10

I

Index Search 30
Insert Cassette 23
Insert Editing 48
Instant ReView 31
ITR (Instant Timer Recording) 40

J

Jog Dial 25

L

Language Selection 12

M

Main Menu 9
Manual Channel Setting 15
Manual Clock Setting 11
Manual Tracking 27
MBR (Multi-Brand Remote) Code Setting 53

N

Next-Function Memory 32

O

On-Screen Display 29
On-Screen Timer Programming 40
On-Screen Timer Recording 40
Override Auto Clock Setting 9

P

PBS Channel 8
Playback 23

R

Record Safety Tab 24
Recording 24
Repeat Playback 27
Reverse Motion Playback 26
Reverse Slow Motion Playback 26
RF Connection 6

S

SAP (Second Audio Program) 35
Second Audio 35
Select Cable Box Output Channel 17
Semi-Auto Clock Setting 10
Shuttle Plus 25
Skip Search 27
Slow Motion Playback 25
Specifications 60
Still Picture Playback 25
SHUTTLE Ring 25
Superimpose 29
S-VHS (Super VHS) 34
S-Video Connection 7

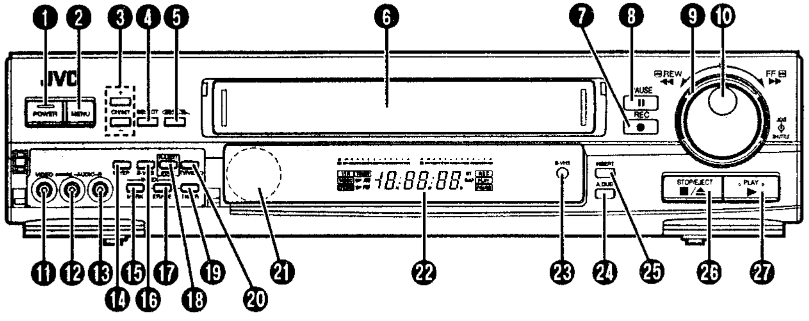
T

Tape Remaining Time 37
Tape Speed Setting 24
Time Zone Selection 10
Tuner Setting 13

V

Variable-Speed Search 26
VCR Plus+ 20
VCR Plus+ Timer Programming 38
VCR Plus+ Timer Recording 38

FRONT VIEW



①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
JVC
POWER
MENU
REW
FF
PAUSE
REC
S-VHS
INSERT
A.DUB
STOP/EJECT
PLAY
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳
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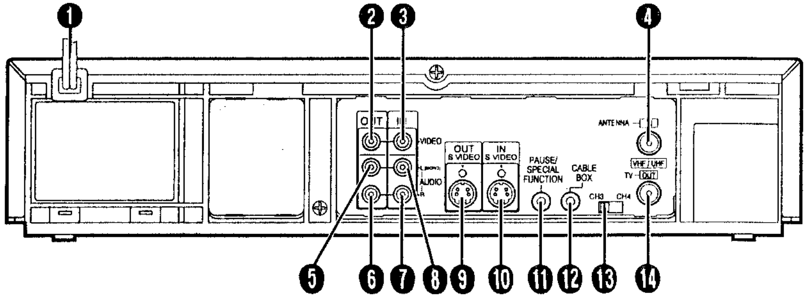
① Power ON/OFF Button (☞ pg. 9)
② Menu Button (☞ pg. 9)
③ Channel [CH] +/– Buttons (☞ pg. 24)
SET +/– Buttons (☞ pg. 9)
④ SELECT Button (☞ pg. 9)
⑤ Instant REVIEW Button (☞ pg. 31)
⑥ Cassette Loading Slot
⑦ Record [REC] Button (☞ pg. 24)
⑧ Pause Button (☞ pg. 24)
⑨ SHUTTLE Ring (☞ pg. 23)
⑩ JOG Dial (☞ pg. 25)
⑪ Video Input Connector (☞ pg. 44)
⑫ Mono Audio Input Connector (☞ pg. 44)
Audio Input Connector [L] (☞ pg. 44)
⑬ Audio Input Connector [R] (☞ pg. 44)
⑭ Recording Speed [SP/EP] Button (☞ pg. 24)
⑮ INDEX MARK Button (☞ pg. 30)
⑯ S-VHS Button (☞ pg. 34)
⑰ INDEX ERASE Button (☞ pg. 30)
⑱ R.A. EDIT START Button (☞ pg. 51)
⑲ TIMER button (☞ pg. 39)
⑳ TV/VIDEO Button (☞ pg 9)
㉑ Remote Control Sensor
㉒ Front Display Panel (☞ pg. 63)
㉓ S-VHS indicator (☞ pg. 34)
㉔ Audio Dubbing [A. DUB] Button (☞ pg. 52)
㉕ INSERT Button (☞ pg. 48)
㉖ Stop/Eject Button (☞ pg. 23)
㉗ Play Button (☞ pg. 23)

REAR VIEW

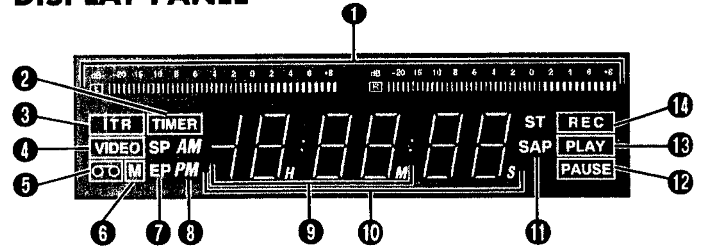


①
②
③
④
OUT
IN
VIDEO
AUDIO
S-VIDEO
PAUSE/ SPECIAL FUNCTION
CABLE BOX
ANTENNA
VHF/UHF
TV OUT
CH3 CH4
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭

① Power Cord (☞ pg. 6)
② Video Output Connector (☞ pg. 6)
③ Video Input Connector (☞ pg. 46)
④ ANTENNA IN Connector (☞ pg. 6)
⑤ Audio Output Connector [L] (☞ pg. 6)
⑥ Audio Output Connector [R] (☞ pg. 6)
⑦ Audio Input Connector [R] (☞ pg. 46)
⑧ Audio Input Connector [L] (☞ pg. 46)
⑨ S-Video Output Connector (☞ pg. 7)
⑩ S-Video Input Connector (☞ pg. 46)
⑪ PAUSE/SPECIAL FUNCTION connector
- Remote PAUSE Connector (☞ pg. 44)
- AV COMPU LINK Connector (☞ pg. 32)
- Random Assemble Editing Connector (☞ pg. 50)

⑫ CABLE BOX Connector (☞ pg. 16)
⑬ Channel 3/4 Switch (☞ pg. 6)
⑭ TV OUT Connector (☞ pg. 6)

FRONT DISPLAY PANEL



①
②
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ITR
TIMER
VIDEO
SP
AM
EP
PM
M
ST
SAP
REC
PLAY
PAUSE
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⑦
⑧
⑨
⑩
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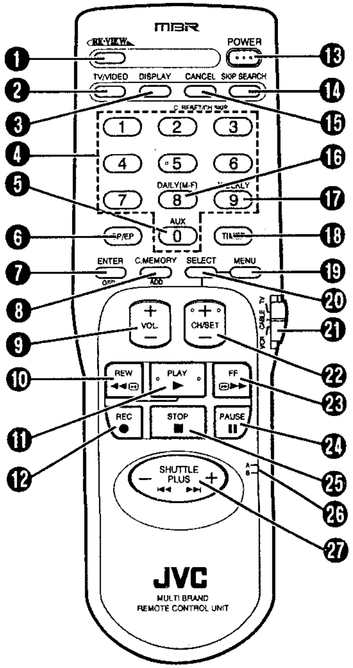
⑫
⑬
⑭

① Audio Level Meter (☞ pg. 36)
② Timer Mode Indicator (☞ pg. 39)
③ Instant Timer Recording Indicator (☞ pg. 40)
④ Video Mode Indicator (☞ pg. 9)
⑤ "Cassette Loaded" Mark
⑥ Counter Memory Mark (☞ pg. 31)
⑦ Tape Speed Indicators (☞ pg. 24)
⑧ AM/PM Indicators (☞ pg. 8)
⑨ Clock Display (☞ pg. 8)
⑩ Channel Display ["AU" for AUX mode]
(☞ pg. 24)
Counter Display (☞ pg. 23)
⑪ Multi-Channel TV Sound Indicators (☞ pg. 35)
⑫ Pause Mode Indicator (☞ pg. 24)
⑬ Play Mode Indicator (☞ pg. 23)
⑭ Recording Mode Indicator (☞ pg. 24)

REMOTE CONTROL (Provided)



MBR
POWER
TV/VIDEO
DISPLAY
CANCEL
SKIP SEARCH
1
2
3
4
5
6
7
8
9
DAILY(M-F)
WEEKLY
AUX
0
SP/EP
TIMER
ENTER
C.MEMORY
SELECT
MENU
ADD
VOL
CH/SET
REW
PLAY
FF
REC
STOP
PAUSE
SHUTTLE PLUS
JVC
MULTI BRAND REMOTE CONTROL UNIT
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•• If the remote control doesn't work properly, remove its batteries, wait a short time and then try again.

① Instant REVIEW Button (☞ pg. 31)
② TV/VIDEO Button (☞ pg. 9)
③ DISPLAY Button (☞ pg. 31)
④ DIGIT Buttons (☞ pg. 10)
⑤ "AUX" Mode Select Button (☞ pg. 44)
⑥ Recording Speed [SP/EP] Button (☞ pg. 24)
⑦ ENTER Button (☞ pg. 24)
On-Screen Display [OSD] Button (☞ pg. 29)
⑧ Counter [C.] MEMORY Button (☞ pg. 31)
ADD Button (☞ pg. 15)
⑨ Volume [VOL] +/– Buttons (☞ pg. 53)
⑩ Rewind [REW] Button (☞ pg. 23)
⑪ PLAY Button (☞ pg. 23)
⑫ Record [REC] Button (☞ pg. 24)
⑬ POWER ON/OFF Button (☞ pg. 9)
⑭ SKIP SEARCH Button (☞ pg. 27)
⑮ CANCEL Button (☞ pg. 42)
Counter [C.] RESET (☞ pg. 31)
Channel [CH.] SKIP Button (☞ pg. 15)
⑯ DAILY Timer Recording Button (☞ pg. 38)
⑰ WEEKLY Timer Recording Button (☞ pg. 38)
⑱ TIMER Button (☞ pg. 39)
⑲ MENU Button (☞ pg. 9)
⑳ SELECT Button (☞ pg. 9)
㉑ TV/CABLE/VCR Switch (☞ pg. 53)
㉒ Channel [CH] +/– Buttons (☞ pg. 24)
SET +/– Button (☞ pg. 9)
㉓ Fast-Forward [FF] Button (☞ pg. 23)
㉔ PAUSE Button (☞ pg. 24)
㉕ STOP Button (☞ pg. 23)
㉖ A/B Code Select Switch (☞ pg. 55)
㉗ SHUTTLE PLUS Button (☞ pg. 25)

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE: 1-800-252-5722

Dear customer:

In order to receive the most satisfaction from your purchase, read the instruction booklet before operating the unit. In the event that repair is necessary, or for the address nearest your location, please refer to the factory service center list below or within the Continental United States, call 1-800-252-5722 for your authorized servicer. Remember to retain your Bill of Sale for Warranty Service.

— JVC

JVC SERVICE & ENGINEERING COMPANY OF AMERICA

DIVISION OF US JVC CORP.

FACTORY SERVICE CENTER LOCATIONS

107 Little Falls Road
Fairfield, NJ 07004-2105
(201) 808-9279

5665 Corporate Avenue
Cypress, CA 90630-0024
(714) 229-8011

230 Eliot Street
Ashland, MA 01721-2377
(508) 881-5923

1500 Lakes Parkway
Lawrenceville, GA 30243-5357
(770) 339-2522

10700 Hammerly, Suite 110
Houston, TX 77043-2310
(713) 935-9331

14505 Commerce Way
Miami Lakes, FL 33016-1512
(305) 362-6252

705 Enterprise Street
Aurora, IL 60504-8149
(708) 851-7855

2969 Mapunapuna Place
Honolulu, HI 96819-2040
(808) 833-5828

890 Dubuque Avenue
South San Francisco, CA 94080-1804
(415) 871-2666

Sophisticated electronic products may require occasional service. Just as quality is a keyword in the engineering and production of the wide array of JVC products, service is the key to maintaining the high level performance for which JVC is world famous. The JVC service and engineering organization stands behind our products.

NATIONAL HEADQUARTERS
JVC SERVICE & ENGINEERING COMPANY OF AMERICA
DIVISION OF US JVC CORP.
107 Little Falls Road
Fairfield, NJ 07004-2105

If you ship the product...

Pack your JVC unit in the original carton or one of equivalent size and strength. Enclose, with the unit, a letter stating the problem or symptom that exists and also a copy of the receipt or bill of sale you received when you purchased your JVC unit. Print your home return address on the outside and the inside of the carton. Send to the appropriate JVC Factory Service Center as listed above.

ACCESSORIES

To purchase accessories for your JVC product, you may contact your local JVC Dealer.
Or from the 48 Continental United States call toll free:
1-800-882-2345.

Don't service it yourself.

CAUTION

To prevent electrical shock, do not open the cabinet. No user serviceable parts inside.
Refer servicing to qualified service personnel.

LIMITED WARRANTY

CONSUMER VIDEO 1-90

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period")

PARTS	LABOR
1 YR	90 DAYS

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:
If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:
Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800) 252-5722.

If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus a letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.

If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:
This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus (Needle) are covered for 90 days from the date of purchase;
7. Accessories;
8. Batteries (except that Rechargeable Batteries are covered for 90 days from the date of purchase); from the date of purchase);

There are no other express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential dameges or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA
DIVISION OF US JVC CORP.

41 Slater Drive
Elmwood Park, New Jersey 07407

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:
Enter below the Model No. and Serial No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No.: ____________________

Serial No.: ____________________

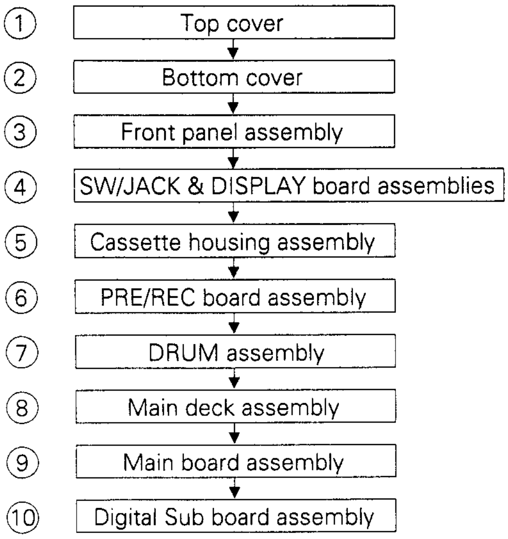
Purchase date: ____________________

Name of dealer: ____________________

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists shows the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	5(S1), SIDE PANEL (L),(R) (HR-S7300U)	
②	BOTTOM COVER	D2	(S2), 7(L1),2(P1)	
③	FRONT PANEL ASSEMBLY	D3	7(L2),*JOG/SHUTTLE	<NOTE1>
④	SW/JACK & DISPLAY BOARD ASSEMBLIES	D4	13(L3),*CN1, *CN3, *CN5	<NOTE2>
⑤	CASSETTE HOUSING ASSEMBLY	D5	2(S3) ,(S8),(S10) EARTH PLATE	<NOTE3>
⑥	PRE/REC BOARD ASSEMBLY	D6	2(S4),*CN1 *CN203,*CN204 SHIELD CASE	

↑ (1) ↑ (2) ↑ (3) ↑ (4) ↑ (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig.No. showing procedure or part location
(4) Indentification of part to be removed,unhooked,unlocked, released,unpluged,unclamped or unsoldered. P = Spring, W = Washer, S = Screw, L = Locking tab, * = Unhook,unlock, release,unplug or unsolder.
(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	5(S1), SIDE PANEL (L),(R) (HR-S7300U)	
②	BOTTOM COVER	D2	(S2), 7(L1),2(P1)	
③	FRONT PANEL ASSEMBLY	D3	7(L2),*JOG/SHUTTLE	<NOTE1>
④	SW/JACK & DISPLAY BOARD ASSEMBLIES	D4	13(L3),*CN1, *CN3, *CN5	<NOTE2>
⑤	CASSETTE HOUSING ASSEMBLY	D5	2(S3) ,(S8),(S10) EARTH PLATE	<NOTE3>
⑥	PRE/REC BOARD ASSEMBLY	D6	2(S4),*CN1 *CN203,*CN204 SHIELD CASE	
⑦	DRUM ASSEMBLY	D7	3(S5),WR1,4(L4), (L5) INERTIA PLATE HEAD CLEANER	<NOTE4>
⑧	MAIN DECK ASSEMBLY	D8	2(S6),WR2 WR3,2(L6),*CN603	<NOTE5>
⑨	MAIN BOARD ASSEMBLY	D9	2(S7),(L7)	
⑩	DIGITAL SUB BOARD ASSEMBLY	D9	2(S9),(L8)	

<NOTE1>
When reattaching the front panel assembly, make sure that the door opener of the cassette housing assembly is lowered in position prior to the reinstallation.

<NOTE2>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE3>
When reattaching the cassette housing assembly, pay careful attention to the switch lever not to make it touch the REC switch knob of the REC SAFETY board assembly from the upside.
(If the REC switch knob of the REC SAFETY board assembly is damaged, cassette loading is impossible.)

<NOTE4>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE5>
- When removing the Main deck assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Main deck assembly.
- When reattaching the Main deck assembly to the Main board assembly, make sure to set the spacers into the retaining slots respectively.

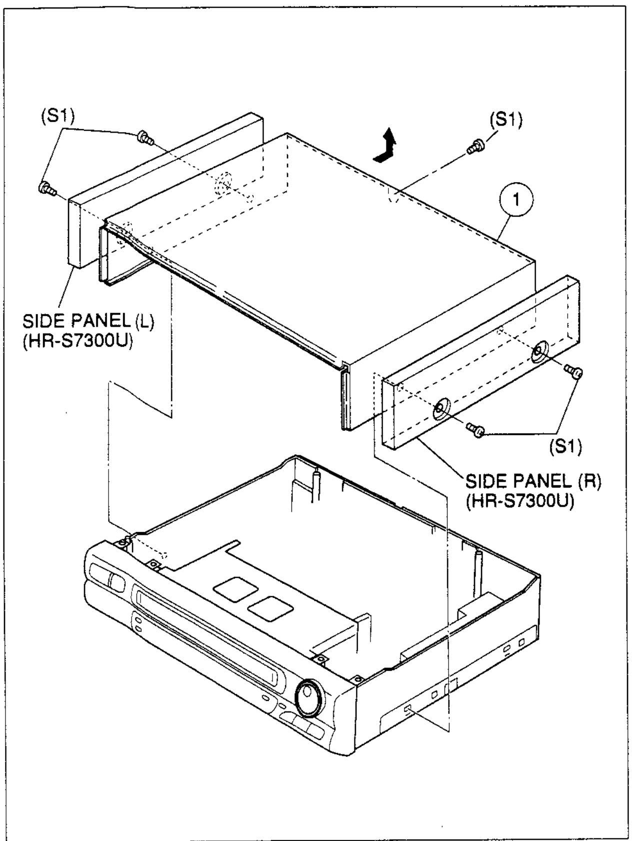

(S1)
(S1)
1
SIDE PANEL (L)
(HR-S7300U)
(S1)
SIDE PANEL (R)
(HR-S7300U)

Fig. D1

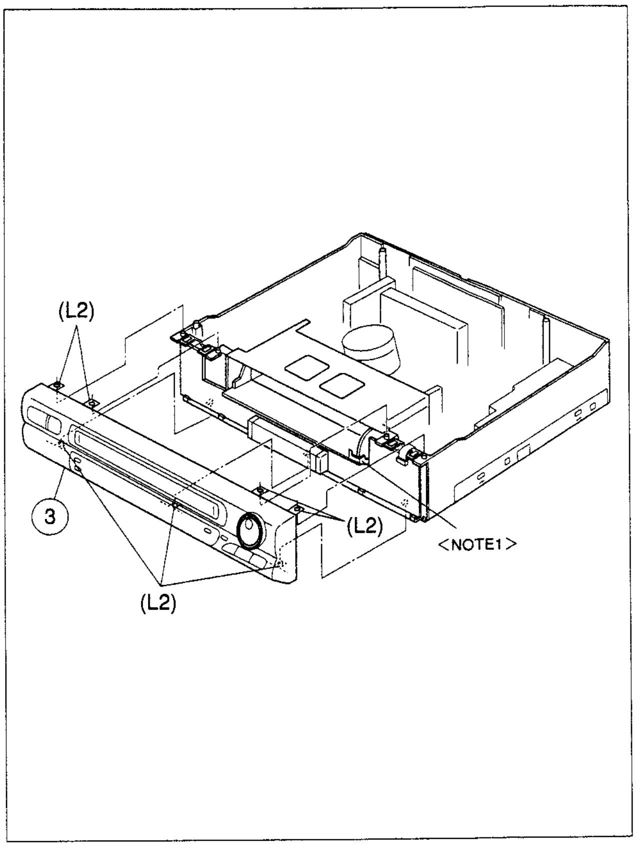


Fig. D3

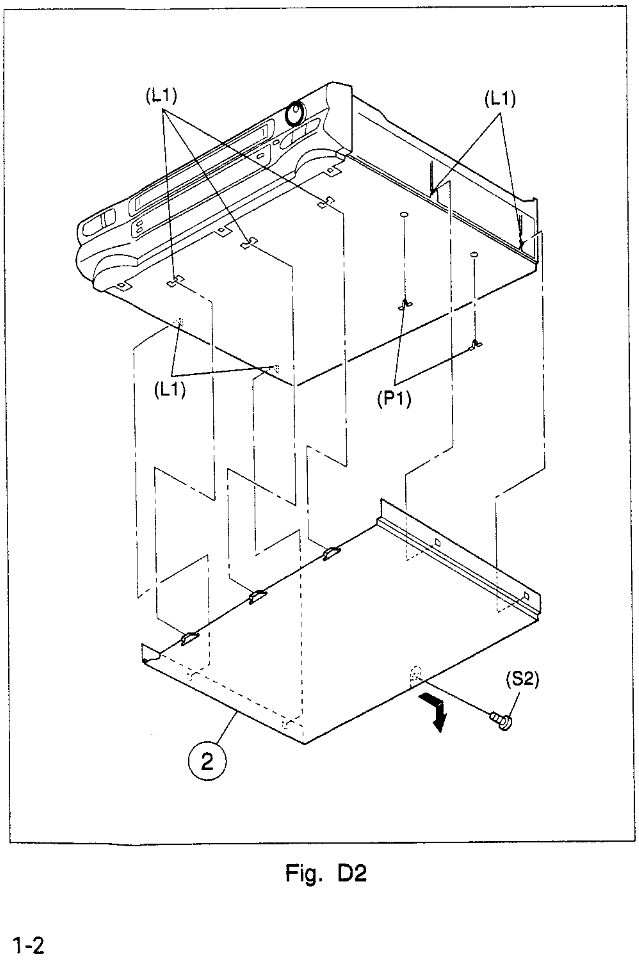

(L1)
(L1)
(L1)
(P1)
(S2)
2

Fig. D2

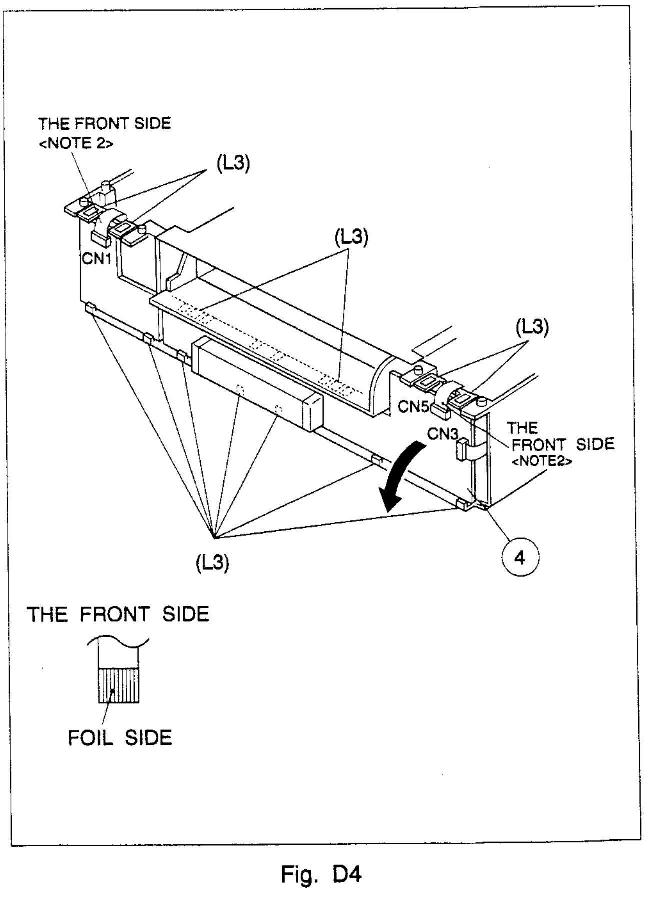

THE FRONT SIDE
<NOTE 2>
(L3)
CN1
(L3)
(L3)
CN5
CN3
THE
FRONT SIDE
<NOTE2>
4
(L3)
THE FRONT SIDE
FOIL SIDE

Fig. D4

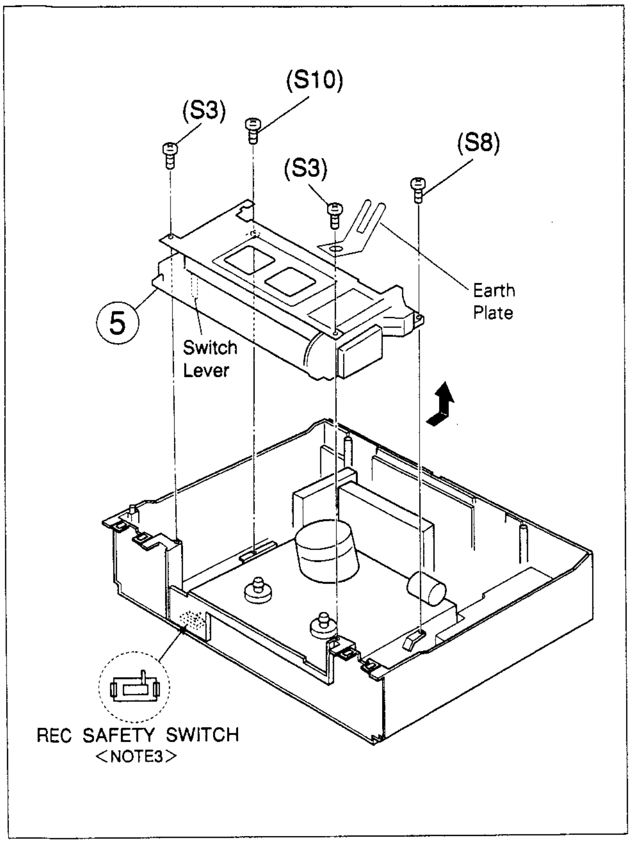

(S10)
(S3)
(S8)
(S3)
Earth Plate
5
Switch Lever
REC SAFETY SWITCH
<NOTE3>

Fig. D5

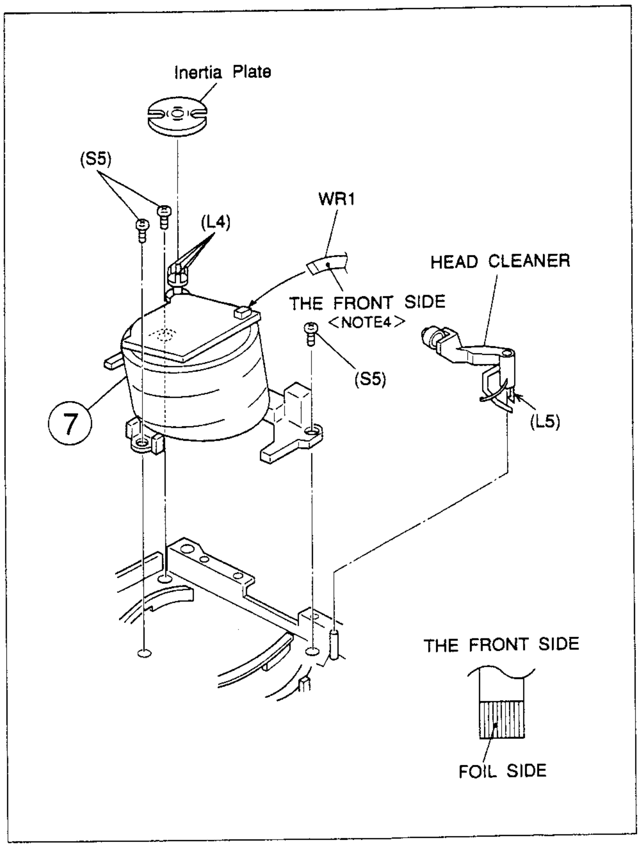

Inertia Plate
(S5)
(L4)
WR1
HEAD CLEANER
THE FRONT SIDE
<NOTE4>
(S5)
7
(L5)
THE FRONT SIDE
FOIL SIDE

Fig. D7

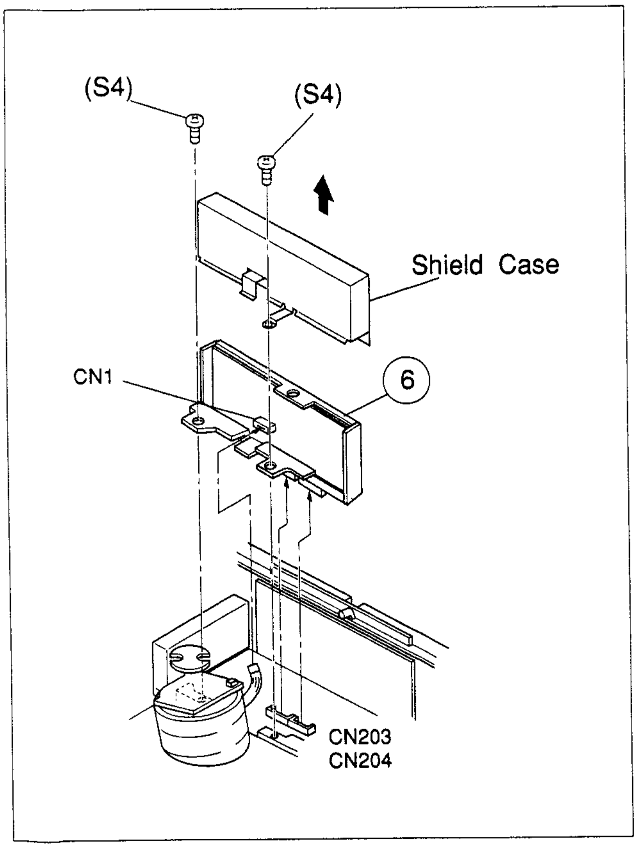

(S4)
(S4)
Shield Case
CN1
6
CN203
CN204

Fig. D6

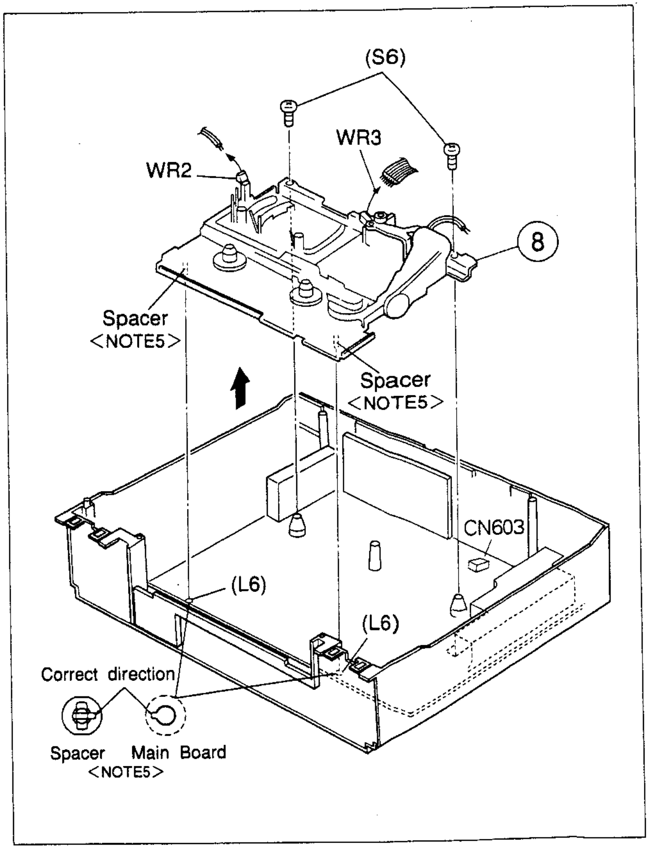

(S6)
WR2
WR3
8
Spacer
<NOTE5>
Spacer
<NOTE5>
CN603
(L6)
(L6)
Correct direction
Spacer
Main Board
<NOTE5>

Fig. D8

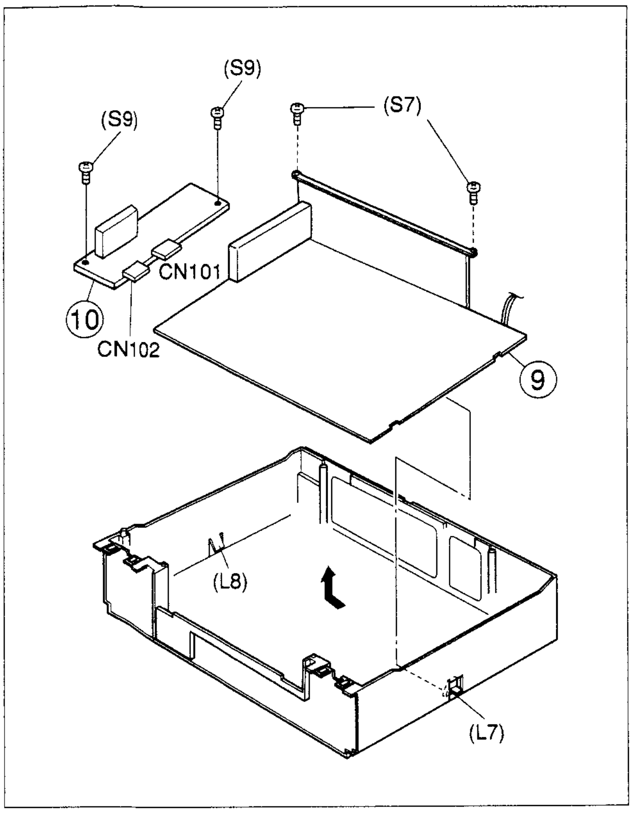

(S9)
(S9)
(S7)
CN101
10
CN102
9
(L8)
(L7)

Fig. D9

1.4 CASSETTE HOUSING INSTALLATION

NOTE: *Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.*

1. Check that the hole of the control cam are aligned to the deck hole. If necessary, turn the mode motor belt by hand to adjust the position.

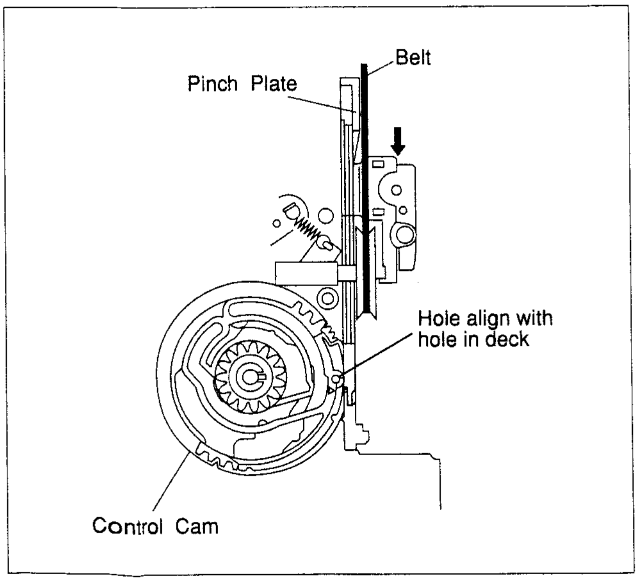

Belt
Pinch Plate
Hole align with hole in deck
Control Cam

Fig. 1-4-1

1.5 SERVICE POSITION

1.5.1 How to take out the Mechanism and Main board assemblies.

(1) Remove the Top cover, Front panel assembly, CN1 of the SW/JACK board assembly and CN3/CN5 of the DISPLAY board assembly.

(2) Take out 4 screws Ⓐ, 2 screws Ⓑ, 1 screw Ⓒ and 2 screws Ⓓ as shown in Fig.1-5-1.

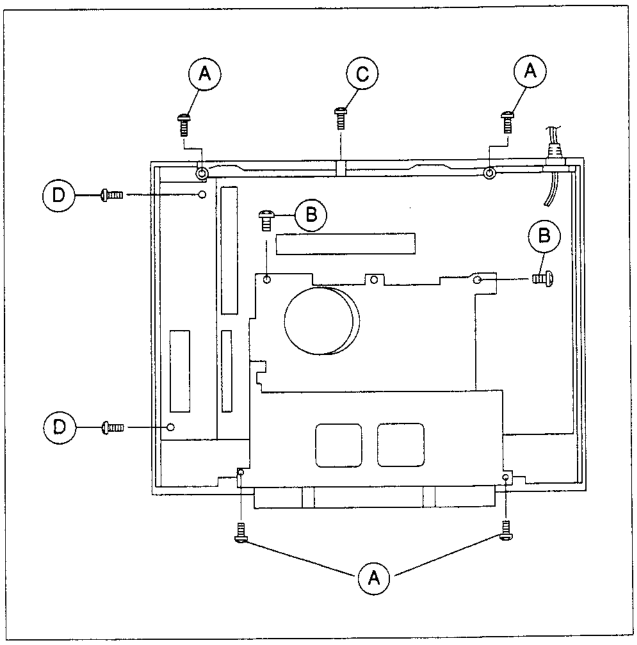


Fig. 1-5-1

(3) Disengage 2 claws ⓐ from the chassis.

(4) Remove the Mechanism assembly (including Cassette housing) and Main board assembly out of the chassis as shown in Fig. 1-5-2.

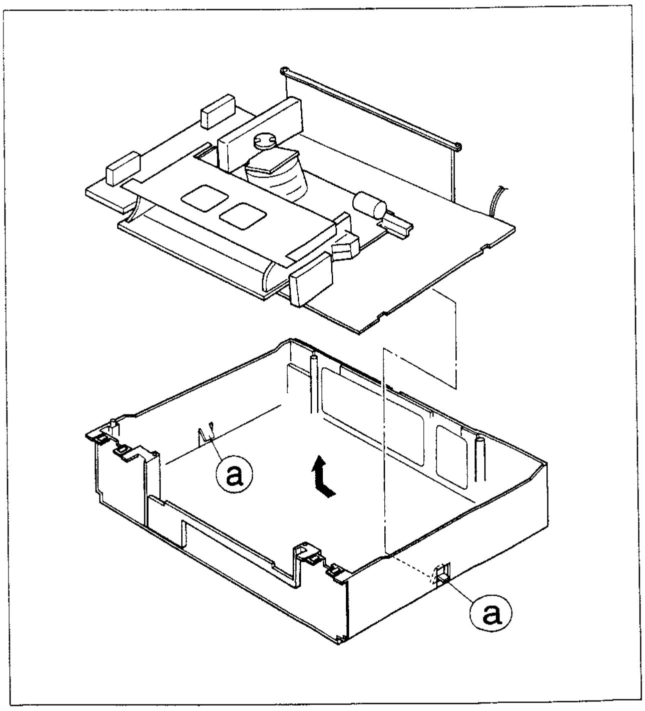


Fig. 1-5-2

(5) Turn over the Mechanism assembly and Main board assembly then connect CN5 and CN3 of the DISPLAY board assembly.
(6) Carry out checks & repairs as necessary as shown in Fig.1-5-3.

Note: *When input the AUDIO/VIDEO signal from connector, connect CN1 of the SW/JACK board assembly.*

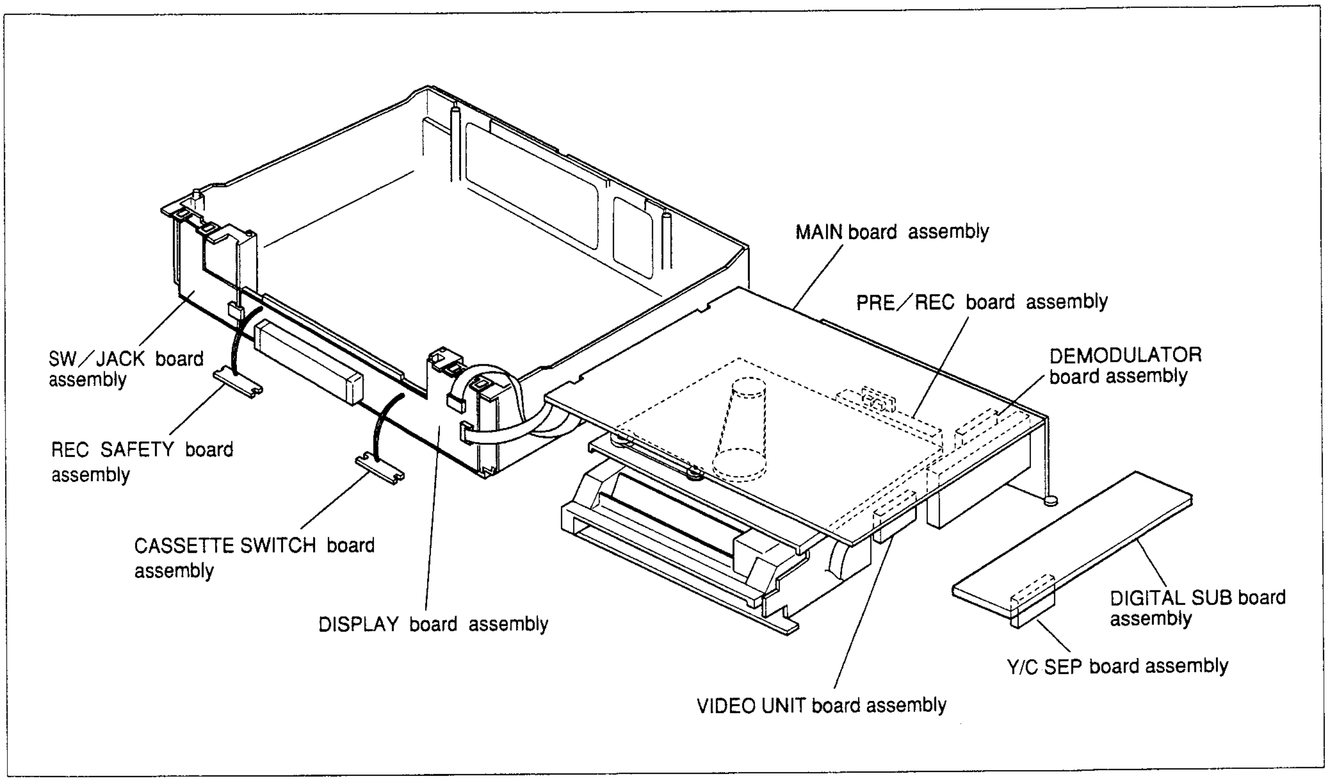

MAIN board assembly
PRE/REC board assembly
DEMODULATOR board assembly
SW/JACK board assembly
REC SAFETY board assembly
CASSETTE SWITCH board assembly
DISPLAY board assembly
DIGITAL SUB board assembly
Y/C SEP board assembly
VIDEO UNIT board assembly

Fig. 1-5-3

1.5.2 Cautions on cassette loading when mechanism is in service position

The REC SAFETY board assembly of this set serves both for detecting the safety tab (erasure prevention tab) of a cassette and detecting a cassette loaded. Therefore, cassette loading in the condition that the mechanism is disassembled from the set needs manual operation of the switches of the REC SAFETY board assembly and the CASSETTE SWITCH board assembly.

1.5.3 Cassette loading and ejecting procedures when mechanism is in service position

(1) Insert a cassette tape halfway into the cassette housing assembly.
(2) Press the switch of the REC SAFETY board assembly to turn on.
(3) When the cassette loading begins and the cassette goes down to the bottom, immediately press the switch of the REC SAFETY board assembly to turn off and hold the status that the switch of the CASSETTE SWITCH board assembly is turned on. (Fix the switch with adhesive tape or put a screwdriver, etc. on it to leave the switch in the ON status.)
(4) In this status, desired operations (recording, playback, fast forward, rewind, etc.) can be performed.

Note: *When the mechanism is in the service position, the safety tab of cassette tape is not detected and recording on cassette tapes without safety tab is possible. Therefore, carefully choose a cassette tape for operation in this mode so as to avoid using cassette tapes of important recording.*

(5) For ejecting the cassette in this status, do it in the reverse order of cassette loading mentioned above.

Note: *If the manual operation REC SAFETY switch timing is incorrect, the cassette may be completely or partially ejected, and the cassette is often ejected incompletely. In such a case, it is possible to take out the cassette by hand.*

If it is desired to load a cassette again after the cassette is ejected in the above procedure, make sure to set the tray of the cassette housing assembly in the frontmost position prior to loading the cassette once again.

1.5.4 Opening on the chassis.

The chassis assembly has openings for easy access to the checkpoints and connector pins as shown in Fig.1-5-4.

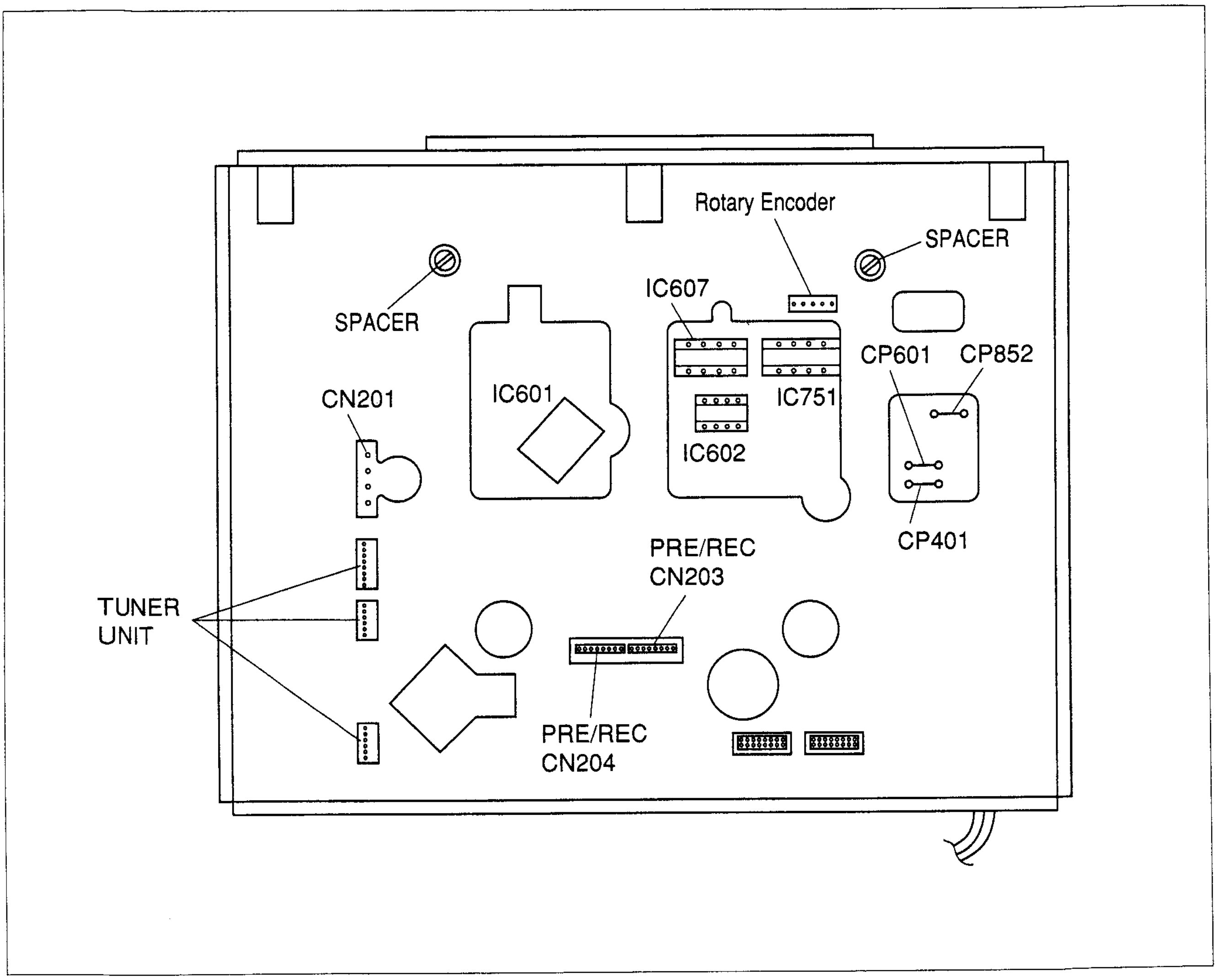

Rotary Encoder
SPACER
SPACER
IC607
CN201
IC601
IC751
IC602
CP601
CP852
CP401
PRE/REC
CN203
TUNER
UNIT
PRE/REC
CN204

Fig. 1-5-4

1.6 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.6.1 How to set the "MECHANISM SERVICE MODE"

(1) Disconnect VCR from AC.
(2) Remove the Top cover, Front panel assembly and cassette housing assembly. (See Page 1-2, 1-3)
(3) Connect B4 (GND) and B5 (TEST) on the DISPLAY board assembly with a jump wire.
(4) Connect VCR to AC.
(5) Press the POWER button.
(6) Select the desired operation modes with the operation buttons or remote controller.

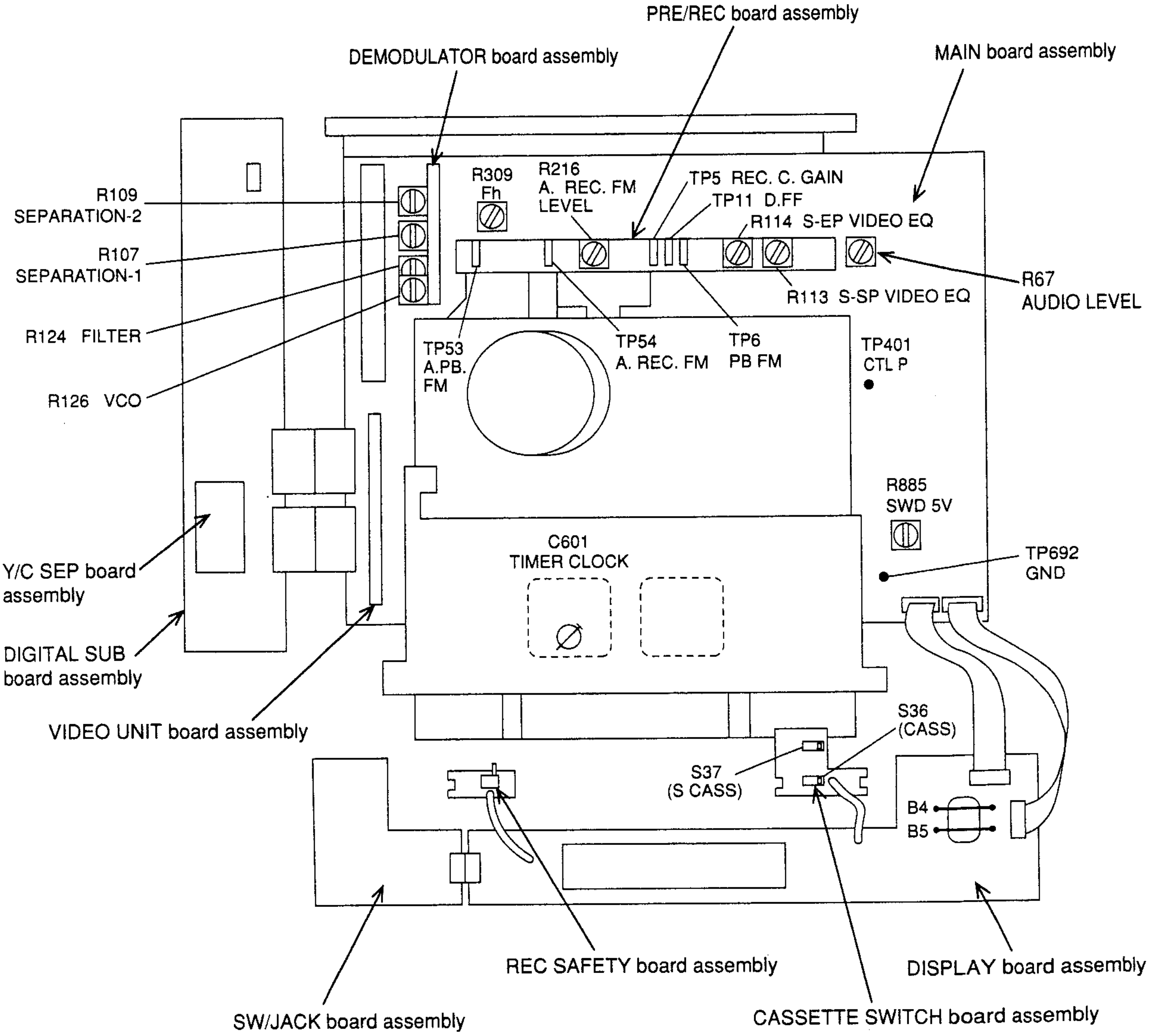

PRE/REC board assembly
DEMODULATOR board assembly
MAIN board assembly
R109
SEPARATION-2
R107
SEPARATION-1
R124 FILTER
R126 VCO
R309
Fh
R216
A. REC. FM
LEVEL
TP5 REC. C. GAIN
TP11 D.FF
R114 S-EP VIDEO EQ
R113 S-SP VIDEO EQ
R67
AUDIO LEVEL
TP53
A.PB.
FM
TP54
A. REC. FM
TP6
PB FM
TP401
CTL P
R885
SWD 5V
TP692
GND
C601
TIMER CLOCK
Y/C SEP board assembly
DIGITAL SUB board assembly
VIDEO UNIT board assembly
S36
(CASS)
S37
(S CASS)
B4
B5
REC SAFETY board assembly
DISPLAY board assembly
SW/JACK board assembly
CASSETTE SWITCH board assembly

Fig. 1-6-1

1.7 EMERGENCY DISPLAY FUNCTION

This product has the function to store the last two previous emergency faults which can be displayed in the FDP when servicing.

1.7.1 How to display record of an emergency faults

(1) Press "N" button of the presetting unit more than 2 seconds. and the two previous emergency faults are shown in the FDP.
(2) Press "N" button of the presetting unit again when return to the normal mode.

[Example] E : 01 : 03

Emergency fault before last (03)
Emergency fault of the last time (01)

[Example] E : — — : — — ← No record of emergency

1.7.3 How to clear emergency record

Press the COUNTER RESET button on the remote controller in the emergency record display mode,and the record of the emergency fault(s) is cleared.

1.7.2 Detail of emergency faults

FDP	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	SUP or TU REEL FG input is absent (for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent(for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP
E : 06	CAPSTAN FG input is absent(for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-7-1 EMERGENCY FAULTS

SECTION 2
MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

(1) Disconnect VCR from AC power before soldering.
(2) Avoid imparting stress to wires when disengaging connectors.
(3) Determine and correct the cause of difficulty before proceeding to adjustments.Do not disturb settings unnecessarily.
(4) Use care not to damage tabs,claws,etc during repairs.
(5) Install the cassette housing assembly only when the mechanism is in the MECHANISM ASSEMBLING MODE position.
(6) When installing the Front panel assembly,be sure to engage the housing door with the door opener of the cassette housing assembly.
If this is omitted,the cassette door will not open at Eject and the cassette can not be removed. (See SECTION 1 DISASSEMBLY.)

2.1.2 Check without cassette housing assembly.

Mechanism operations can be observed easily by removing the cassette housing assembly. Use the MECHANISM SERVICE MODE (See SECTION 1 DISASSEMBLY)

2.1.3 Manual removal of loaded tape

When the deck enters the emergency mode with cassette tape loaded and it can not be ejected by pressing the EJECT button,take out of the cassette tape according to the following procedure.

(1) Disconnect the power cord from AC outlet then take out the Top cover and Front panel assembly.
(2) Turn the loading motor on the Main deck assembly by hand in the unloading direction to where the pole base assembly (supply and take-up) is positioned below the cassette tape.At that time, pay careful attention to the tape not to get soiled with grease.
(3) Take out 4 screws of the cassette housing assembly.(See SECTION 1 DISASSEMBLY)
(4) Remove the cassette housing with slackened tape and guard panel of cassette.
(5) Wind up the tape by turning the reel hub(either supply or take-up side for convenience) from the bottom of the cassette,and remove the cassette tape.

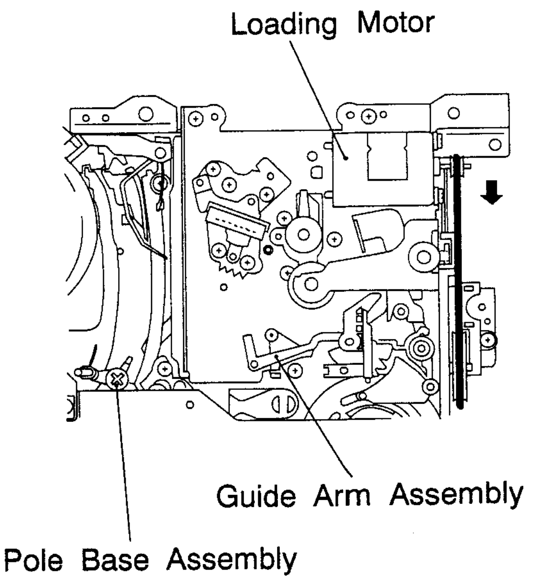


Fig. 2-1-1

2.1.4 Test Equipment

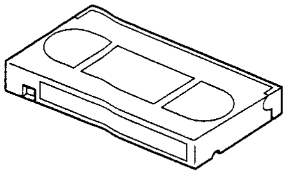
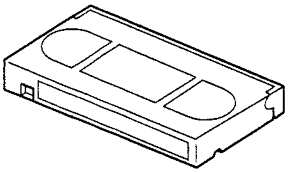
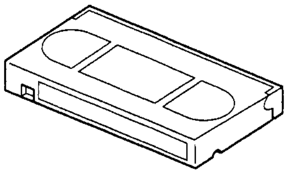
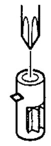
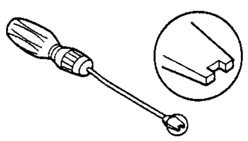
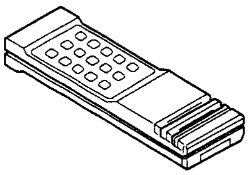
Alignment tape (SP) MHP	Alignment tape (EP) MHP-L	Back tension cassette gauge PUJ48076-2	A/C head positioning tool PTU94010
			
Roller driver PTU94002	Presetting unit PTU94008	Grease KYODO-SH-P	
			

Table 2-1-1 Test equipment

2.2 MAIN MECHANISM PARTS

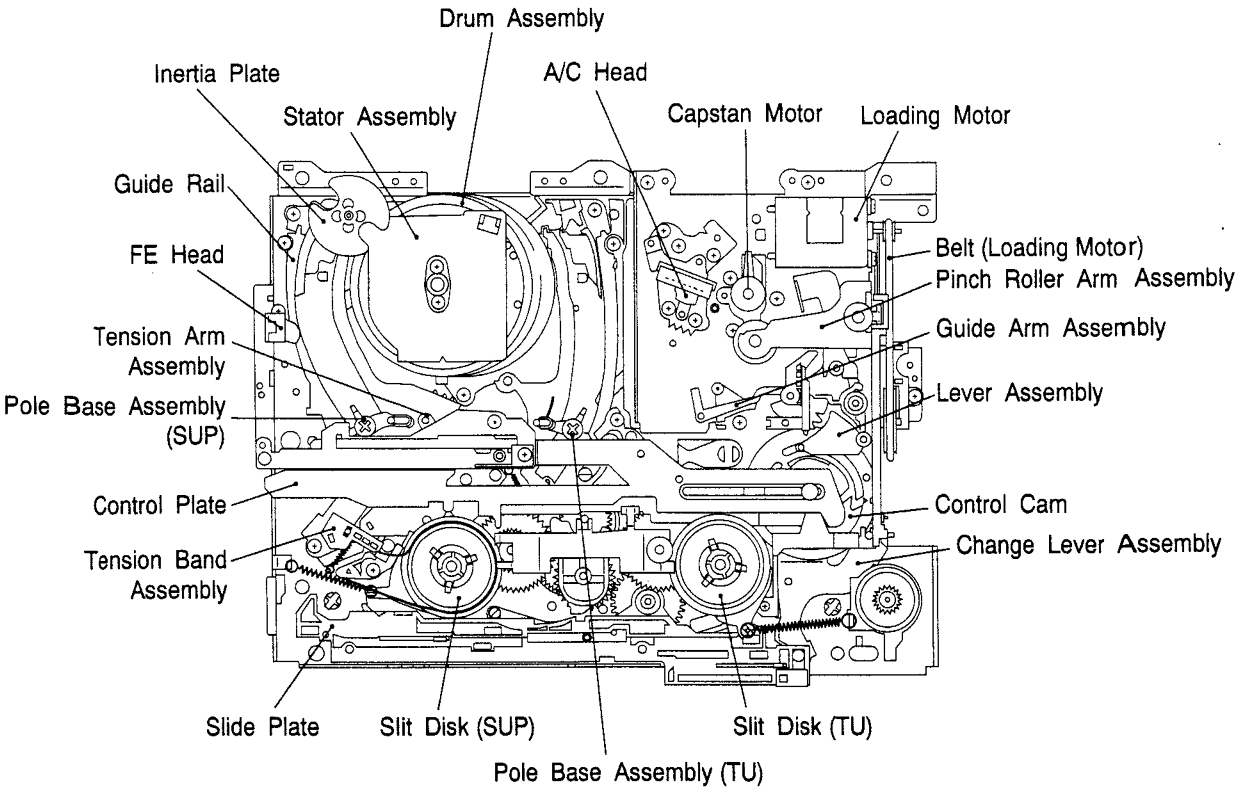

Drum Assembly
Inertia Plate
A/C Head
Stator Assembly
Capstan Motor
Loading Motor
Guide Rail
FE Head
Belt (Loading Motor)
Pinch Roller Arm Assembly
Guide Arm Assembly
Tension Arm Assembly
Lever Assembly
Pole Base Assembly (SUP)
Control Plate
Control Cam
Tension Band Assembly
Change Lever Assembly
Slide Plate
Slit Disk (SUP)
Slit Disk (TU)
Pole Base Assembly (TU)

Fig. 2-2-1 Top view of main deck

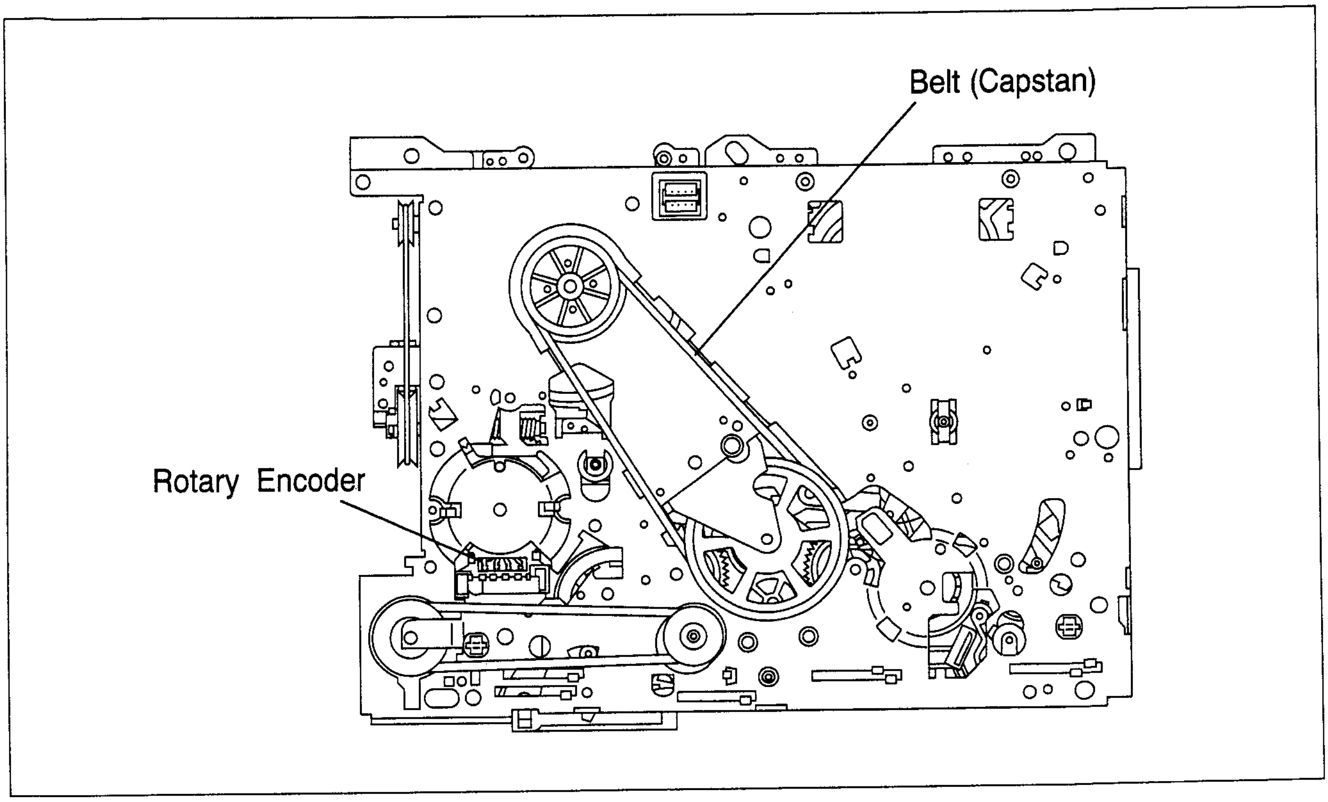


Fig. 2-2-2 Bottom view of main deck

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable,but usually not feasible in practice.Therefore,perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads,tape guides and brush can detract from playback picture quality and in extreme cases,even damage the tape.For cleaning,use a finemesh cotton cloth(about the texture of a white dress-shirt) moistened in alcohol. It is recomended to also clean the tape tension posts and capstan.

- To clean the video heads,press the moistened cloth gently against the upper drum with fingertip and turn the drum by hand.
- Do not use a vertical stroke,as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenishing. Apply only when replacing lubricated parts(also clean and replace lubrication of mating parts if soiled). For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly. Before oiling,clean with alcohol.Apply one or two drops of oil. Avoid excess oil.

1. Table 2-2-1 indicates the oil and grease used in this set. Use these or recommended locally available equivalents.

Category	Part No.
Oil	COSMO-HV56
Grease	KYODO-SH-P

Table 2-2-1

2. Grease is not required for a replacement cassette housing assembly,as this has been applied at the factory.

NOTE : *Stir grease that has been stored for an extended period.*

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage.Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced as and when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning,lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions.However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time,even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum motor assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Slit disk (supply, take-up)		○
	Clutch unit (supply, take-up)		○
	Worm gear assembly		○
	Control plate		○
	Slide plate		○
Other	Brush assembly	★○	★○
	Tension band assembly	○	○
	Rotary encoder		○

★ : Cleaning
○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 DISASSEMBLY/ASSEMBLY PROCEDURE OF MECHANISM

2.4.1 Precaution before disassembling mechanism

This mechanism has an exclusive operation mode provided for disassembling and installation of the mechanism (MECHANISM ASSEMBLING MODE), and it is suggested to set the mechanism to this mode before disassembly and installation.The exclusive mechanism operation mode is not generally used and becomes available by manual setting only. Then this procedure starts with the condition that the cabinet parts and cassette housing assembly have been removed.

2.4.2 How to set the exclusive mechanism operation mode (MECHANISM ASSEMBLING MODE)

(1) Turn the loading motor belt by hand.
(2) Confirm that the hole of the control cam are aligned to the deck hole as shown in Fig.2-4-1.

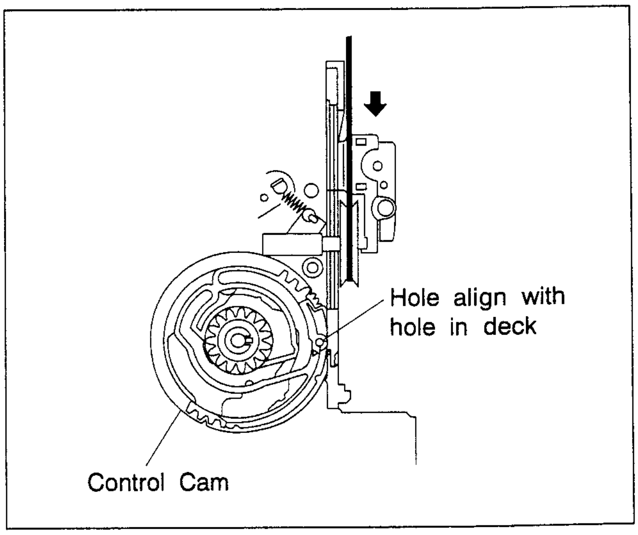


Fig. 2-4-1

2.5 MAIN PARTS REPLACEMENT OF MECHANISM

2.5.1 Pinch Rollar Arm Assembly

(1) Remove the slit washer.
(2) Tilt up the pinch rollar assembly in direction of arrow.

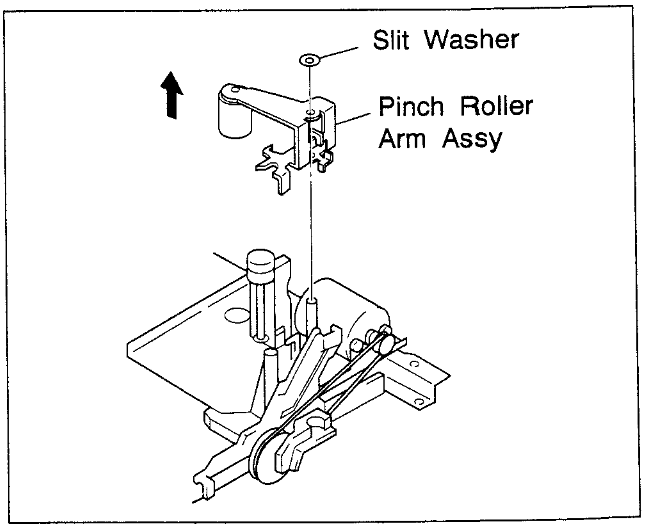


Fig.2-5-1

2.5.2 A/C Head

1. Removal

(1) Take out 2 screws (A).
(2) Remove the A/C head with head base.

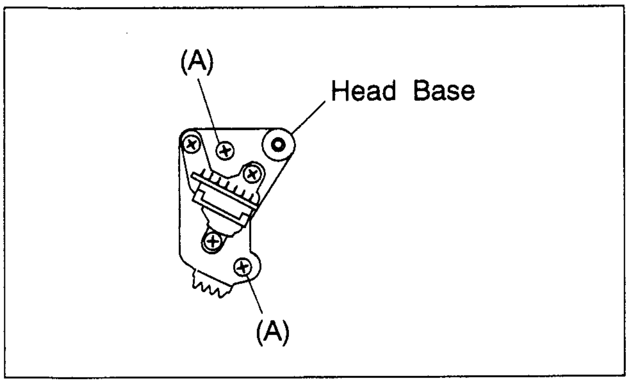

(A)
Head Base
(A)

Fig.2-5-2

(3) When replacing the A/C head only,remove 3 screws (B), use care not to misplace the 4 springs.

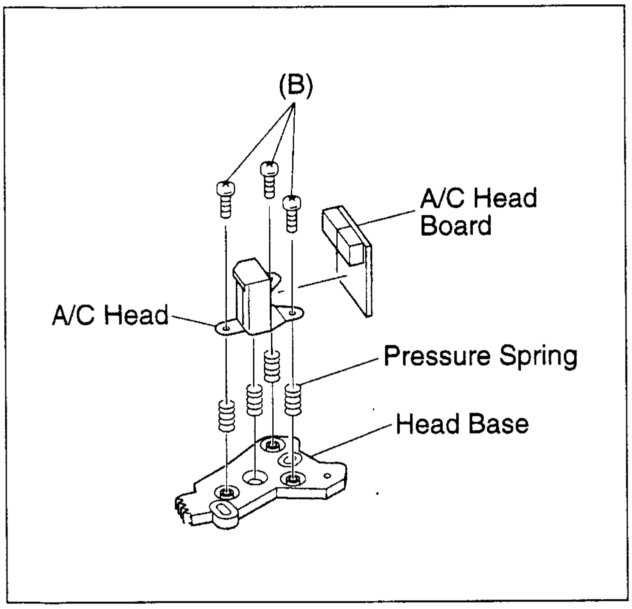

(B)
A/C Head Board
A/C Head
Pressure Spring
Head Base

Fig.2-5-3

2. Installation

(1) Temporarily set A/C head height as indicated in Fig. 2-5-4.

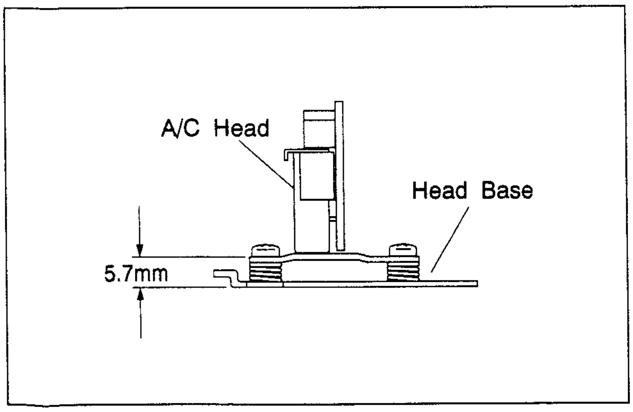

A/C Head
Head Base
5.7mm

Fig.2-5-4

NOTES:

- *It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.*
- *Perform interchangeability adjustments after electrical adjustments.*

2.5.3 Pinch Plate

1. Removal

(1) Disengage 2 claws, then remove the pinch plate.

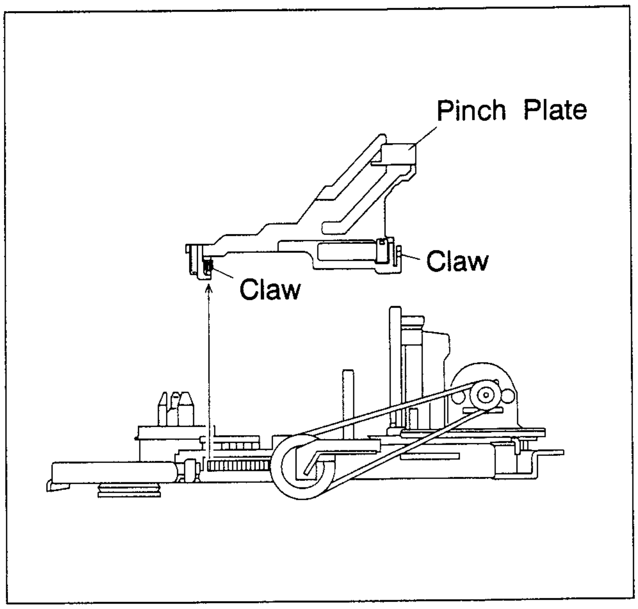

Pinch Plate
Claw
Claw

Fig.2-5-5

2. Installation

(1) When installing pinch plate,align rack of pinch plate and triangle mark of control cam as indicated in Fig.2-5-6.

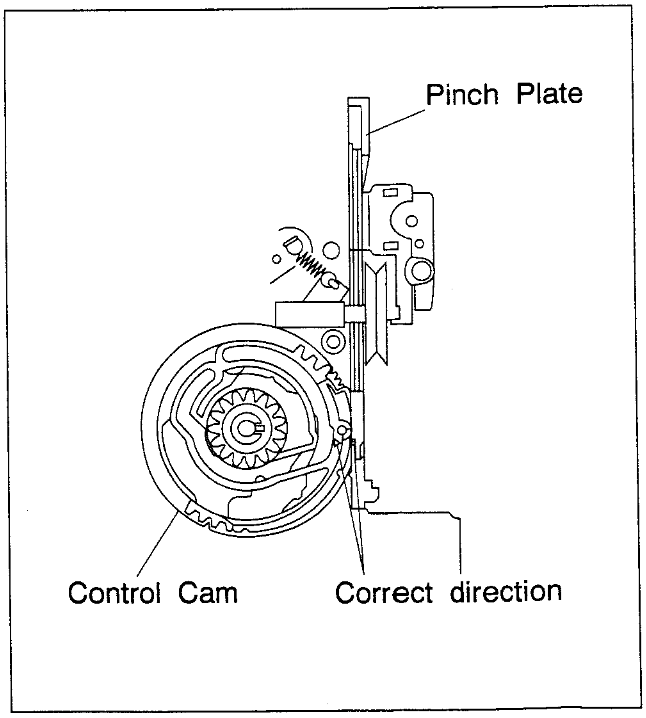

Pinch Plate
Control Cam
Correct direction

Fig. 2-5-6

2.5.4 Loading Motor

(1) Disengage the belt between loading motor and worm gear.

(2) Take out 2 screws (A), 1 screw (B) and the motor guide then remove the loading motor.

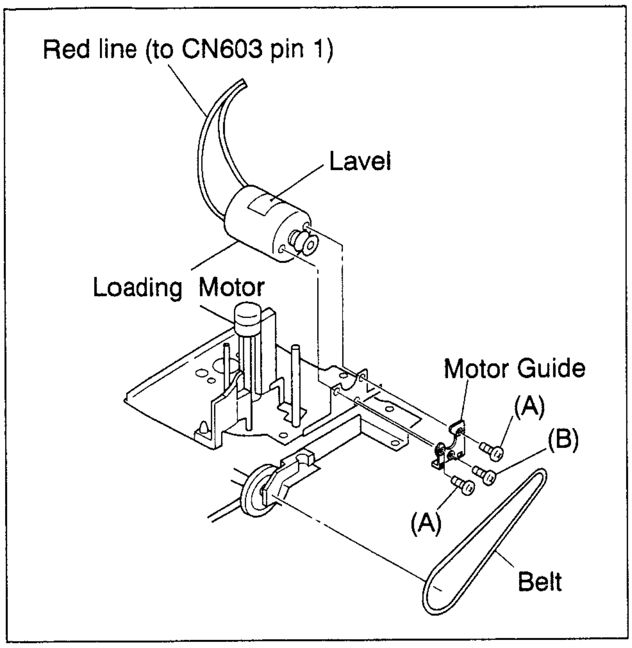

Red line (to CN603 pin 1)
Lavel
Loading Motor
Motor Guide
(A)
(B)
(A)
Belt

Fig.2-5-7

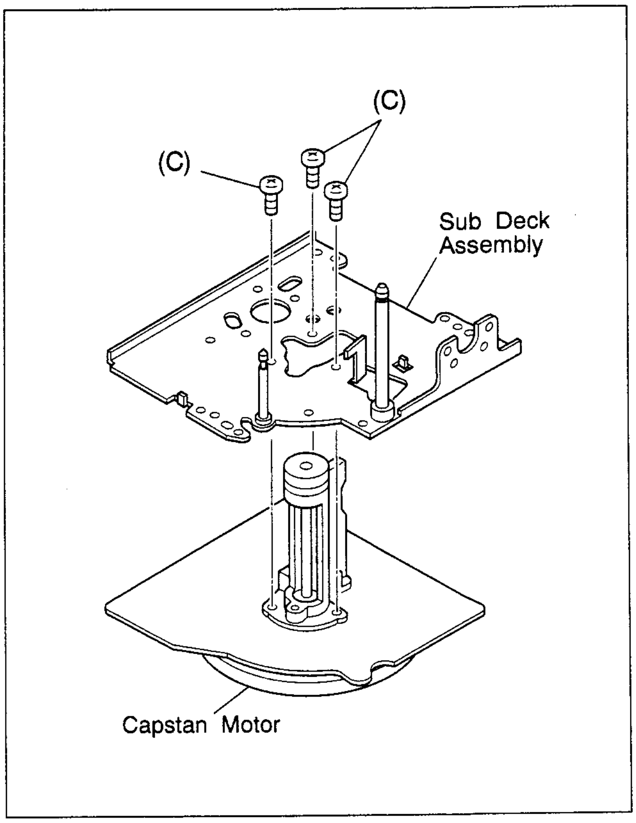

(C)
(C)
Sub Deck Assembly
Capstan Motor

Fig.2-5-9

2.5.5 Lever Assmebly,Sub Deck Assembly,Capstan Motor

(1) Take out 1 slit washer,then remove the lever assembly.

(2) Disengage the belt(capstan motor) from bottom of mechanism assembly first as indicated in Fig.2-5-10.

(3) Take out 2 screws (A), 1 screw (B) and remove the sub deck assembly as indicated in Fig.2-5-8.

(4) Take out 3 screws (C) and remove the capstan motor from the sub deck assembly as indicated in Fig.2-5-9.

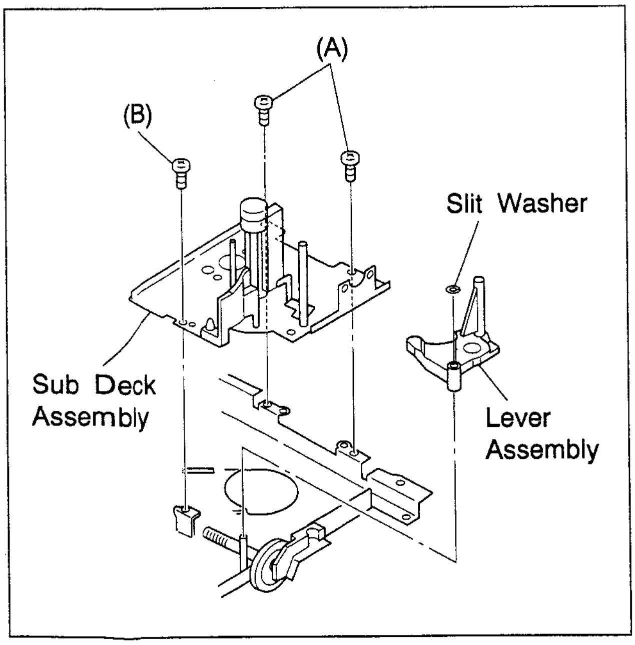

(A)
(B)
Slit Washer
Sub Deck Assembly
Lever Assembly

Fig.2-5-8

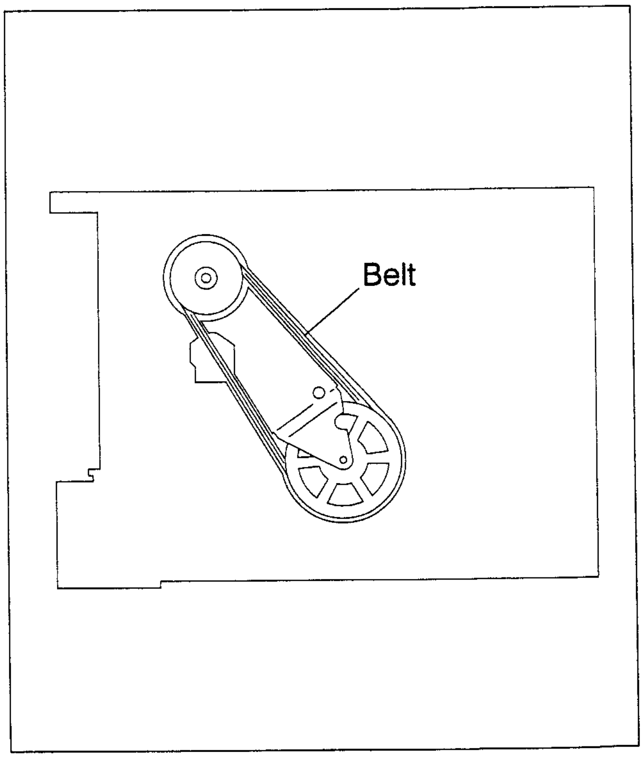


Fig.2-5-10

2.5.6 Control Bracket

(1) Take out 1 screw (A) and 1 screw (B).

(2) Remove the control bracket.

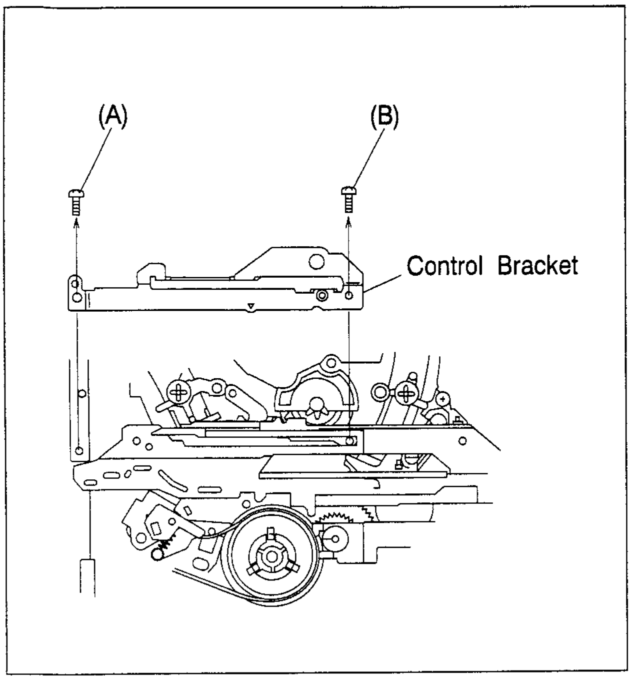

(A)
(B)
Control Bracket

Fig.2-5-11

2.5.7 Reel Bracket,Slit disk (take-up), control Bracket-2

(1) Take out 2 slit washers.

(2) Remove the reel bracket and slit disk(take-up).

(3) Take out 1 screw (A) and remove the control bracket-2.

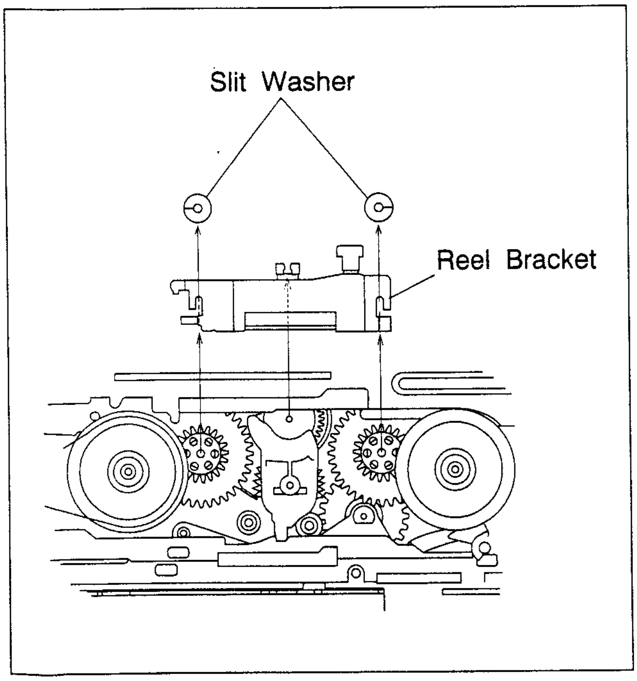

Slit Washer
Reel Bracket

Fig.2-5-12

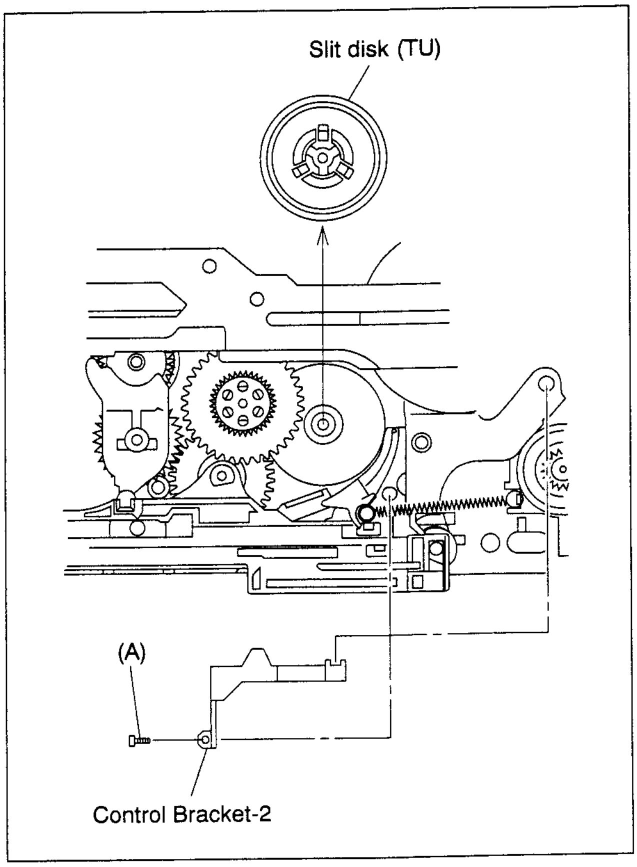

Slit disk (TU)
(A)
Control Bracket-2

Fig.2-5-13

2.5.8 Control Plate

(1) Take out 1 slit washer.

(2) Disengage 2 claws and remove the control plate.

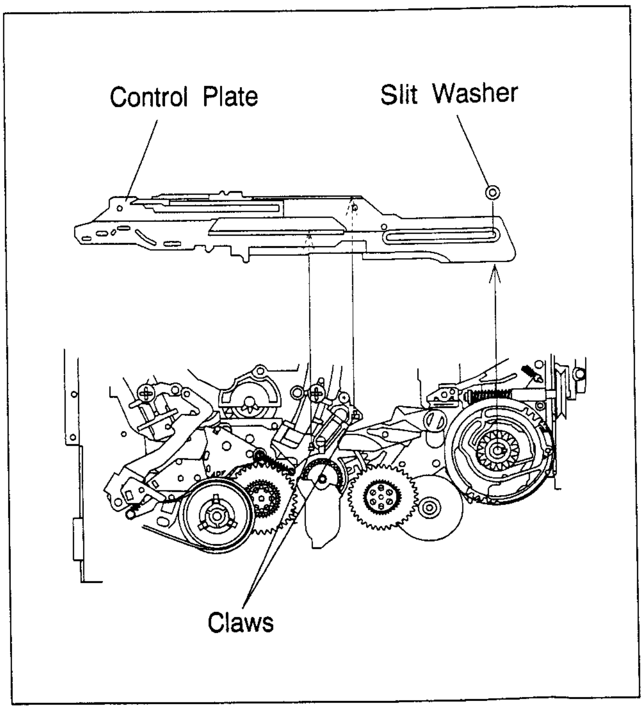

Control Plate
Slit Washer
Claws

Fig.2-5-14

2.5.9 Sub Brake(take-up),Control Cam

(1) Disengage 1 spring (a) and 1 claw then remove the sub brake (take-up).
(2) Disengage 1 claw and remove the control cam.

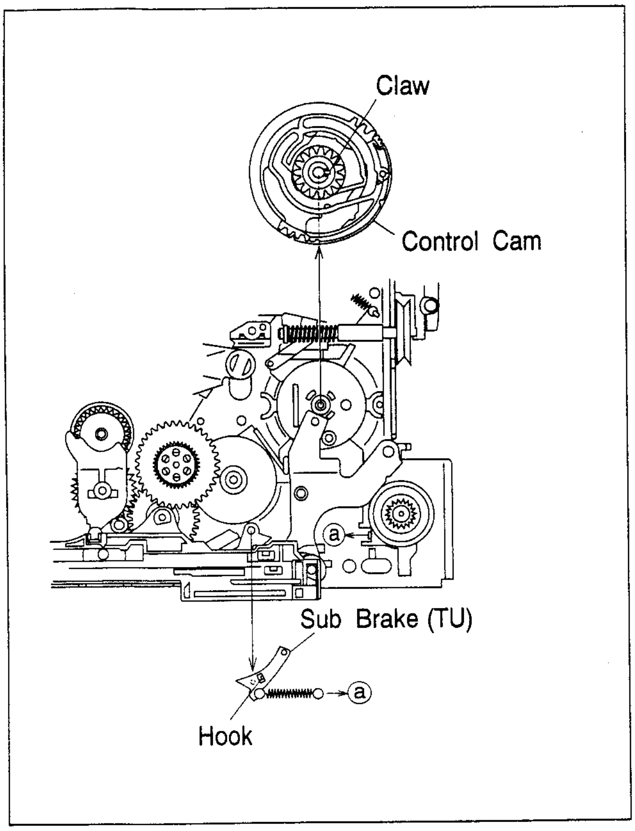

Claw
Control Cam
a
Sub Brake (TU)
a
Hook

Fig.2-5-15

2.5.10 Slide Plate

(1) Disengage 7 claws from bottom of the mechanism assembly and remove the slide plate.

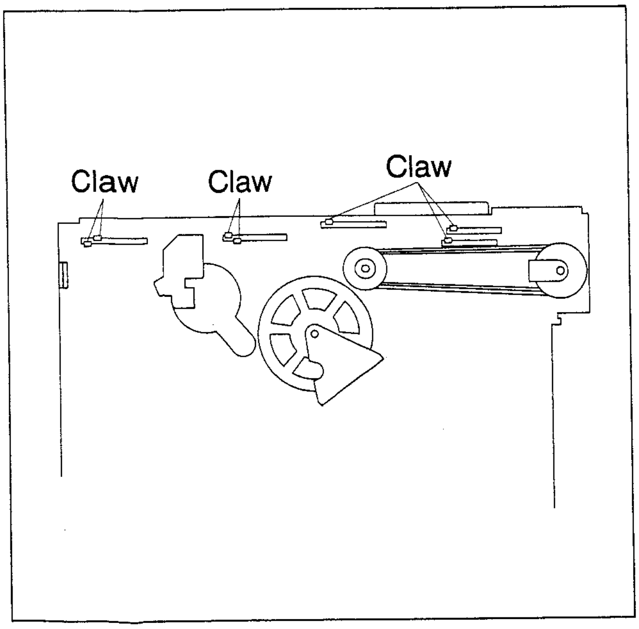

Claw
Claw
Claw

Fig. 2-5-16

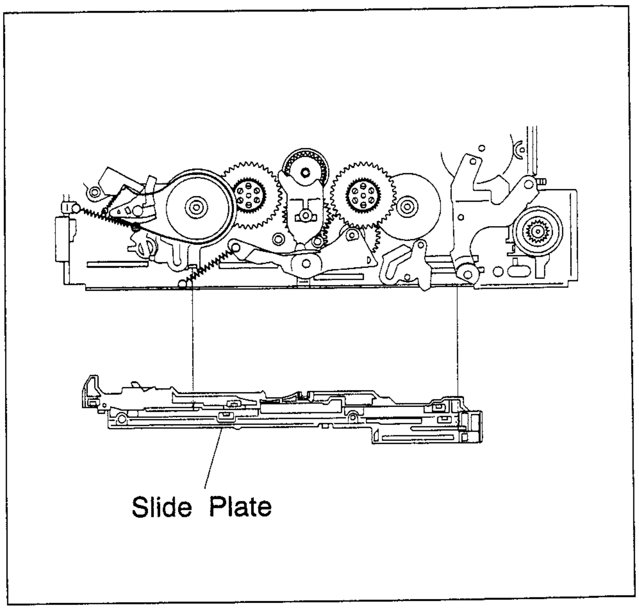

Slide Plate

Fig. 2-5-17

2.5.11 Change Lever,Rotary Encoder

(1) Remove the change lever.
(2) Disengage 2 claws and remove the rotary encoder.

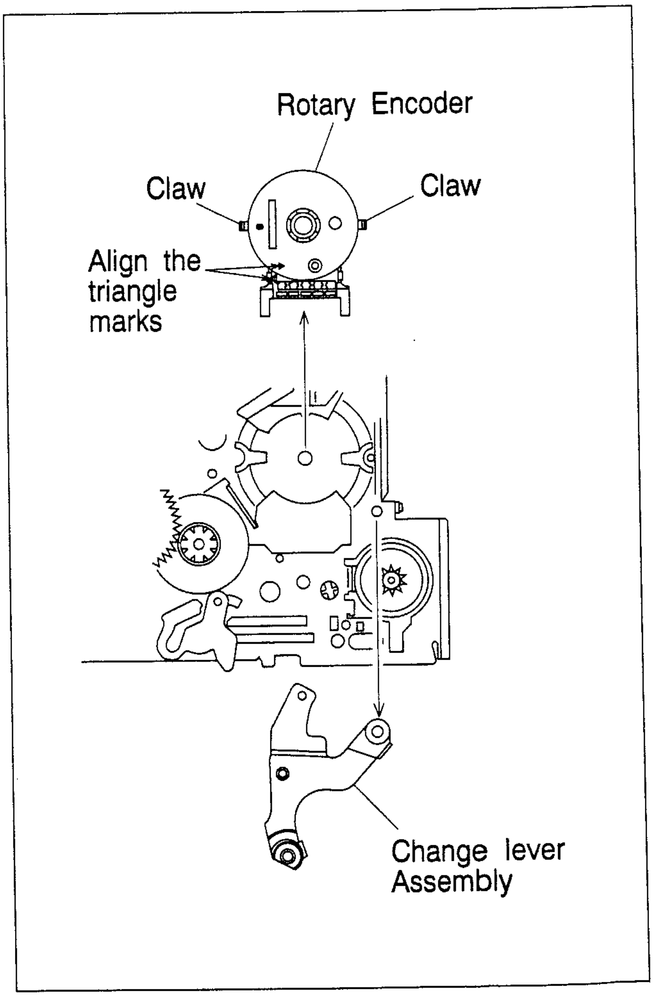

Rotary Encoder
Claw
Claw
Align the triangle marks
Change lever Assembly

Fig. 2-5-18

2.5.12 Sub Brake (supply),Tension Band Assembly, Tension Arm Assembly, Take-up Lever Assembly,Slit Disk(supply)

(1) Disengage 1 spring ⓐ.
(2) Disengage 1 claw and remove the sub brake (supply).
(3) Take out 1 screw (A),spring ⓒ and slit washer.
(4) Remove the tension arm assembly with tension band assembly.
(5) Disengage 1 spring ⓑ and remove the take-up lever assembly.
(6) Remove the slit disk(supply).

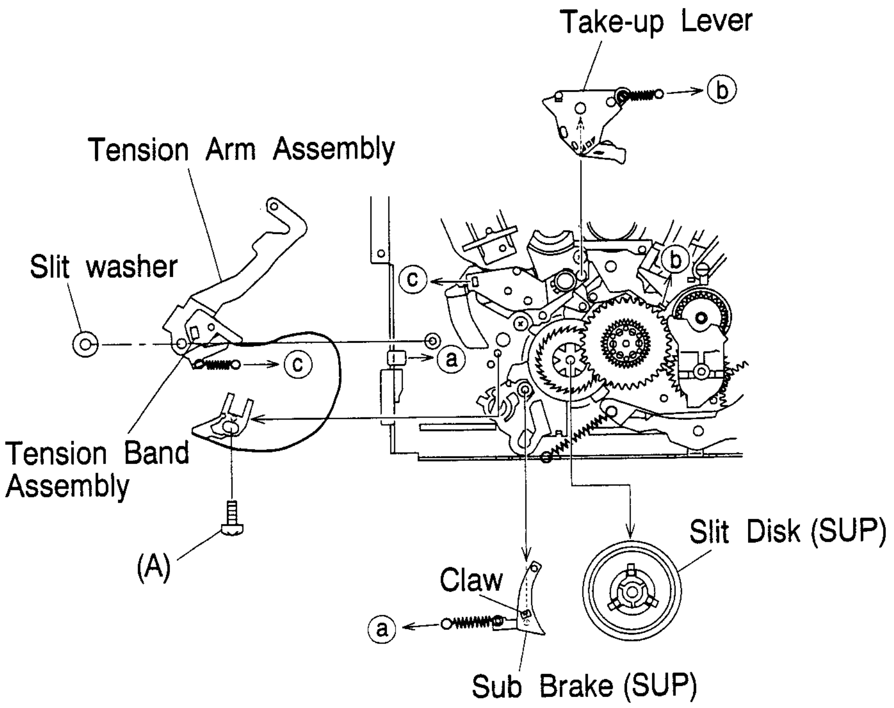

Take-up Lever
ⓑ
Tension Arm Assembly
Slit washer
ⓒ
ⓑ
ⓒ
ⓐ
Tension Band Assembly
(A)
Slit Disk (SUP)
Claw
ⓐ
Sub Brake (SUP)

Fig. 2-5-19

2.5.13 Take-up Head,Tension Arm Lever

(1) Remove the take-up head and tension arm lever.

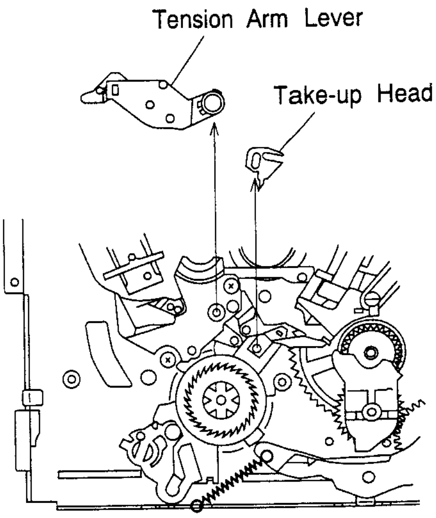

Tension Arm Lever
Take-up Head

Fig.2-5-20

2.5.14 Guide Rail

(1) Take out 5 screws Ⓐ, 1 screw Ⓑ and 1 screw Ⓒ.

(2) Disengage 4 claws and remove the guide rail.

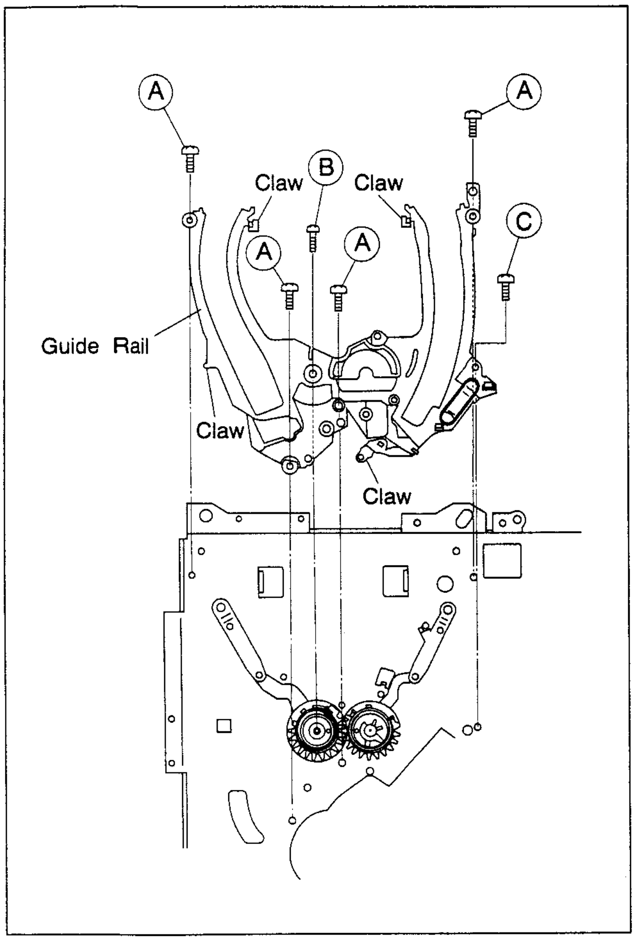

Ⓐ
Ⓐ
Claw
Ⓑ
Claw
Ⓒ
Ⓐ
Ⓐ
Guide Rail
Claw
Claw

Fig. 2-5-21

2.5.15 Stator Assembly

(1) Take out 2 screws (A).

(2) Raise the stator assembly in the direction indicated by the arrow to remove it (also remove the inertia roller).

(3) Remove the flat cable.

(4) To reinstall,first secure the flat cable,then insert 2 screws (A).

(5) After reinstalling, be sure to perform PB switching point adjustment(See SECTION 3 ELECTRICAL ADJUSTMENT).

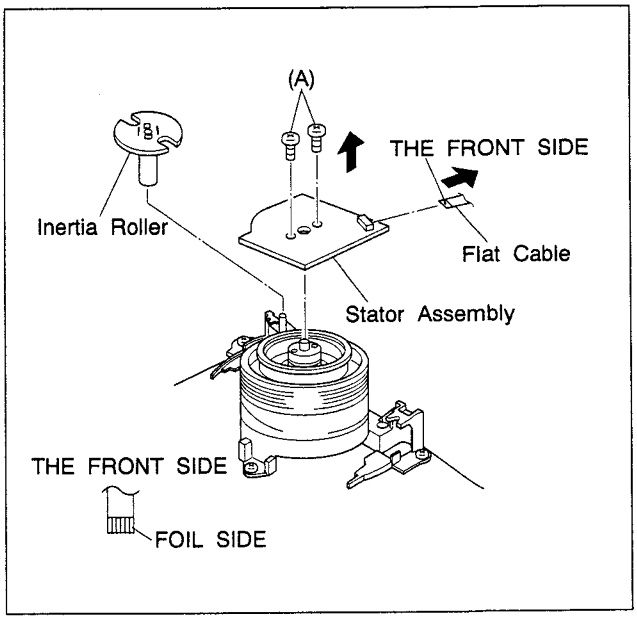

(A)
THE FRONT SIDE
Inertia Roller
Flat Cable
Stator Assembly
THE FRONT SIDE
FOIL SIDE

Fig. 2-5-22

NOTE : *When refitting the connector, check that the flat wire is inserted correctly.*

2.5.16 Rotor Assembly

(1) Remove the stator Assembly.

(2) Take out 2 screws (B) and remove the rotor Assembly.

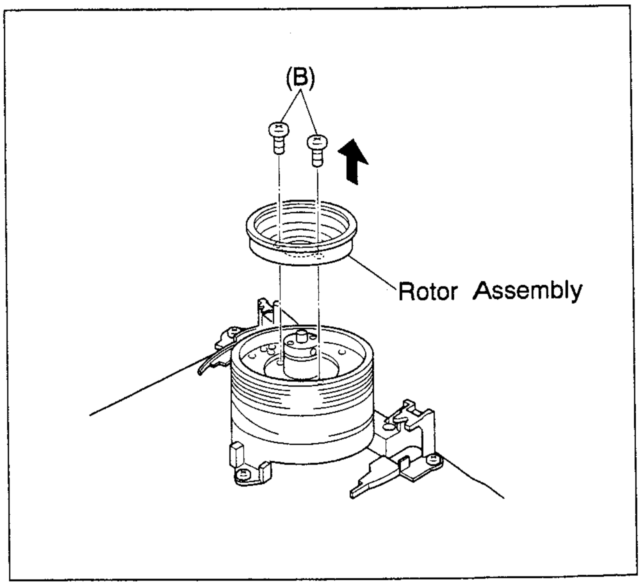

(B)
Rotor Assembly

Fig.2-5-23

(3) Align the upper drum assembly and rotor assembly phase as indicated in Fig.2-5-24.

(4) Overlap holes (a) of the upper drum assembly with holes (b) of the rotor assembly and secure with 2 screws (B) as indicated in Fig.2-5-23.

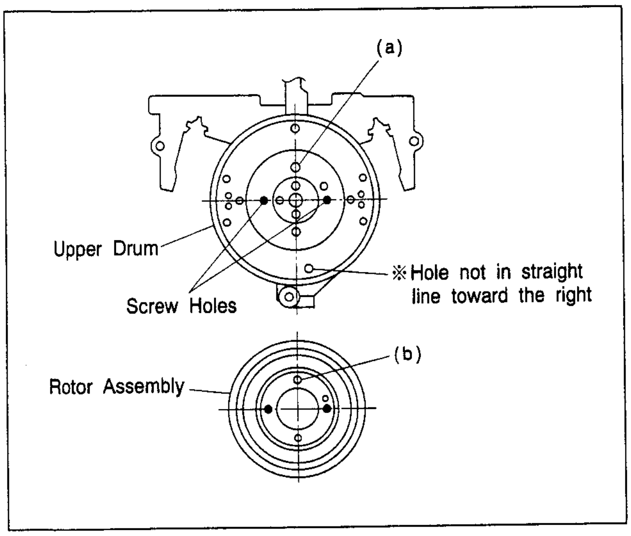

(a)
Upper Drum
Screw Holes
※Hole not in straight line toward the right
(b)
Rotor Assembly

Fig. 2-5-24

2.5.17 Upper Drum Assembly

1. Removal

(1) Remove the stator assembly and rotor assembly.

(2) Use a 1.5 mm hexagonal wrench to loosen the collar assembly screw and remove the collar assembly.

(3) Remove the upper drum assembly and use tweezers to remove the washer.

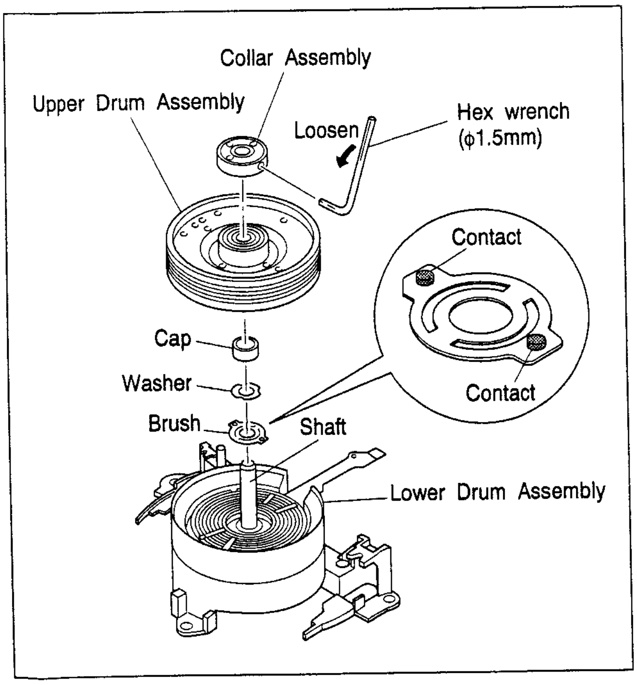

Collar Assembly
Upper Drum Assembly
Loosen
Hex wrench (φ1.5mm)
Contact
Cap
Washer
Contact
Brush
Shaft
Lower Drum Assembly

Fig. 2-5-25

NOTE : *If the Brush is replaced, do not apply the grease to the contacts.*

2. Installation

(1) Use an air brush to clean the lower drum assembly and the coil section of the new upper drum assembly.

(2) Set a new washer on the drum shaft as indicated in Fig.2-5-25.

NOTE : ***Be sure to use the new washer when replace the upper drum assembly.***

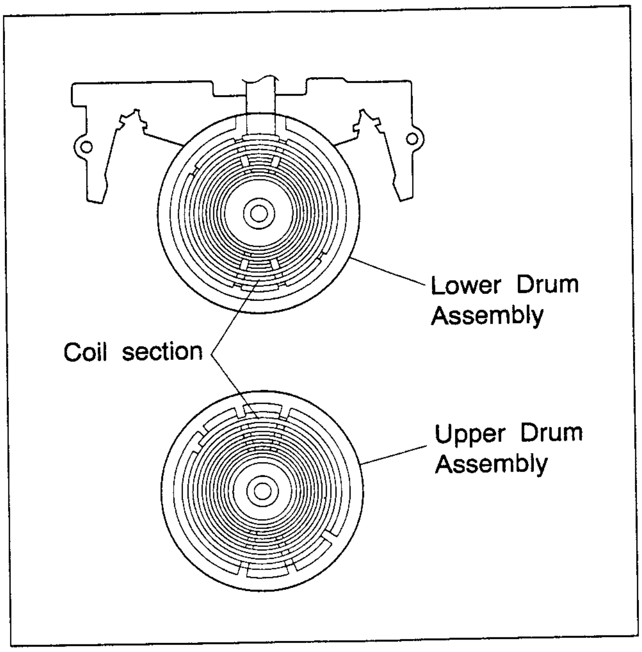

Lower Drum Assembly
Coil section
Upper Drum Assembly

Fig.2-5-26

(3) Note the top and bottom of the collar assembly and determine the position as indicated in Fig.2-5-27.

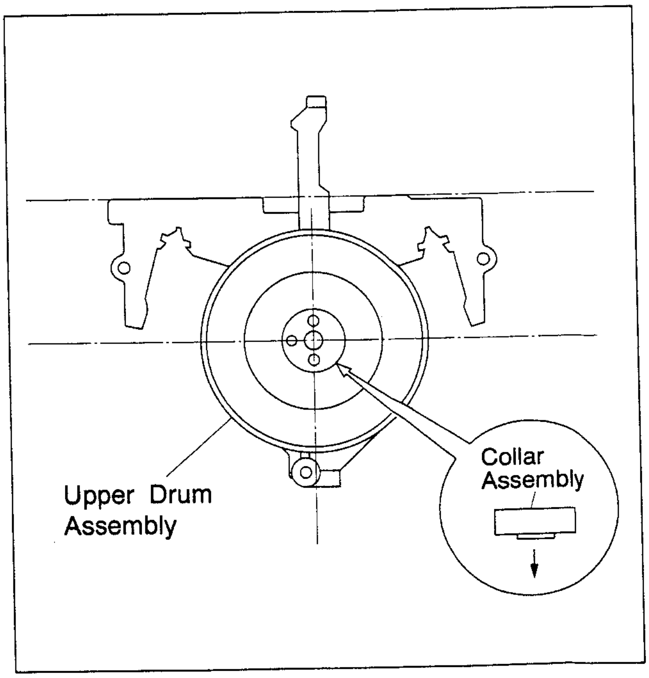

Upper Drum Assembly
Collar Assembly

Fig.2-5-27

(4) While pressing the collar assembly evenly from above with your fingertips,secure the hexagonal screw.

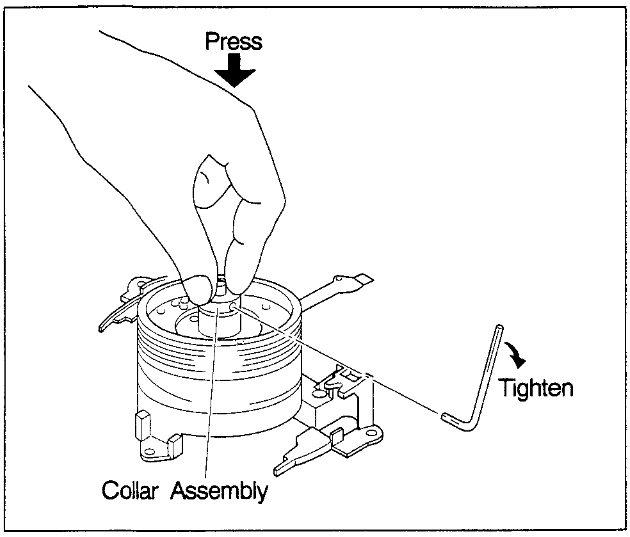

Press
Tighten
Collar Assembly

Fig.2-5-28

(5) After installing,gently turn the upper drum by hand and confirm normal rotation.
(6) Install the rotor assembly and stator assembly.
(7) Clean the upper and lower drum assembly and perform the following adjustments;
    - PB switching point adjustment
    - Slow tracking preset adjustment
    - Interchangeability adjustment (be sure to check EP mode)

2.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

2.6.1 Precaution

The rotary encoder and syscon circuit are closely interrelated.Therefore,the rotary encoder and control cam connection determines the operations of mechanical parts such as plates,gears,brakes,etc.Correct positioning of these parts is essential for smooth tape loading and mechanical operations.

2.6.2 Loading Arm Assembly (supply,take-up)

(1) Install the supply loading arm assembly and the take-up loading arm assembly so that their positioning markings on the respective gear face each other and the holes of their arms correspond to the holes on the main deck assembly respectively.
(2) After setting the guide rails,engage the pole base assemblies with the tip of the loading arms respectively. Then,enter the mechanism into the unloading mode to return the pole base assemblies to the front position.
(3) Reassemble the peripheral parts of the guide rail to its original position.

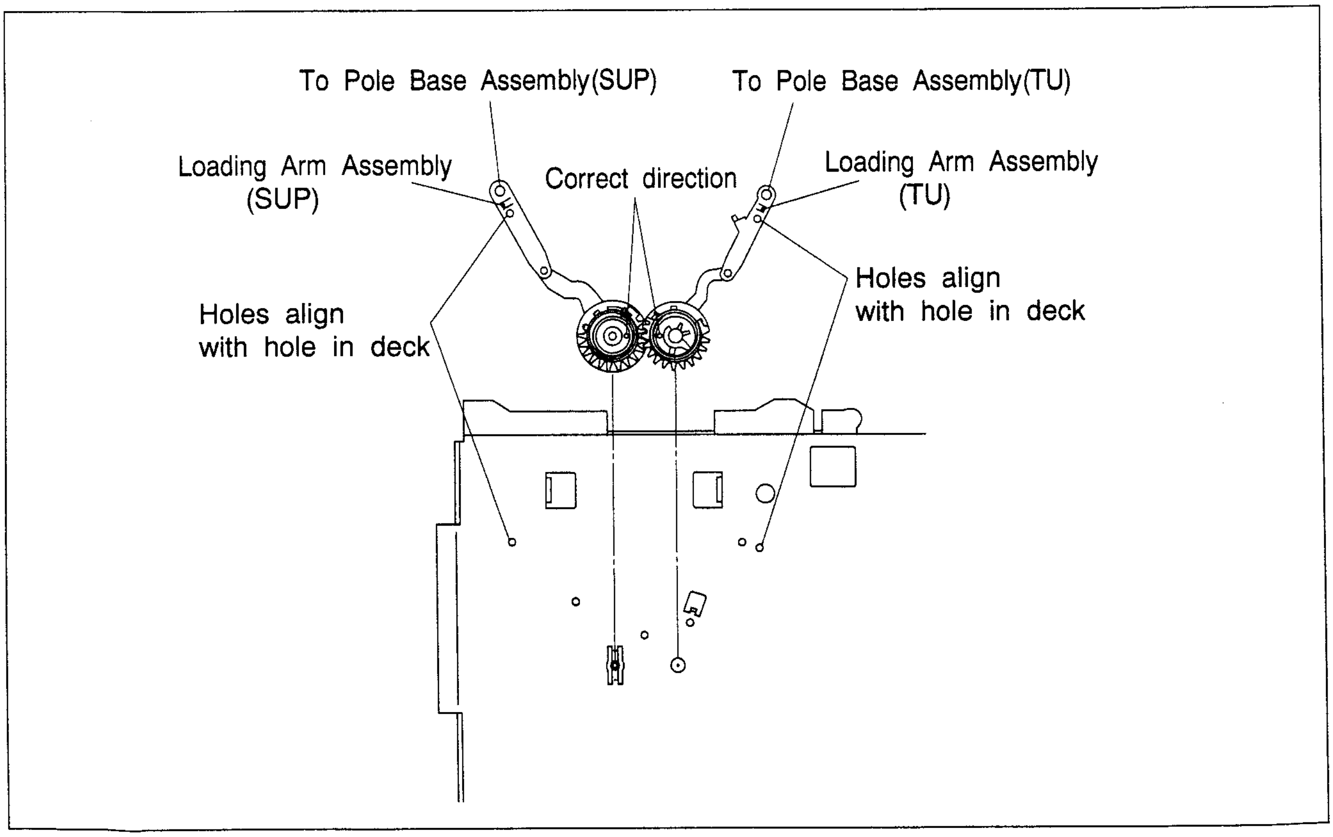

To Pole Base Assembly(SUP)
To Pole Base Assembly(TU)
Loading Arm Assembly (SUP)
Correct direction
Loading Arm Assembly (TU)
Holes align with hole in deck
Holes align with hole in deck

Fig. 2-6-1

2.6.3 Rotary Encoder,Change Lever,Control Cam

(1) When reinstalling the rotary encoder,adjust its position so as to fit the triangle marks each other and push it deep untill it is locked by the pawls.

(2) When reinstalling the change lever,set it so as to make its positioning hole correspond to the hole of the main deck assembly.

(3) When re-engaging the control cam,lower the capstan brake assembly while setting it so as to make its positioning hole correspond to the hole of the main deck assembly.

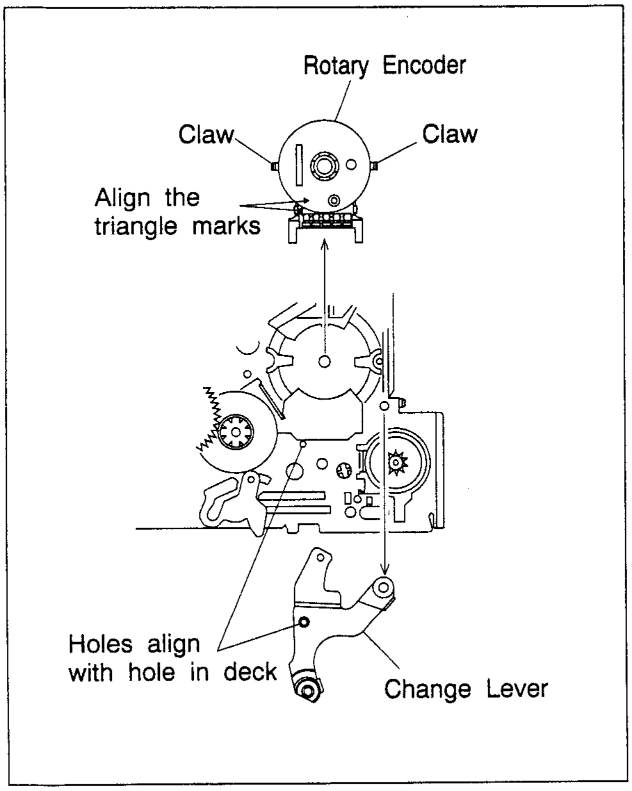

Rotary Encoder
Claw
Claw
Align the triangle marks
Holes align with hole in deck
Change Lever

Fig. 2-6-2

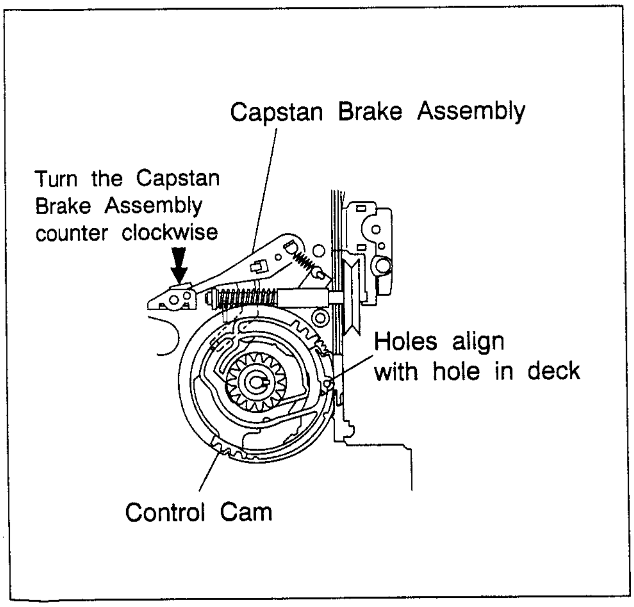

Capstan Brake Assembly
Turn the Capstan Brake Assembly counter clockwise
Holes align with hole in deck
Control Cam

Fig. 2-6-3

2.6.4 Slide Plate

(1) Lower both the main brake assembly (supply and take-up) untill they touch the edge of the main deck assembly while reinstalling the slide plate so as to make the respective positioning holes of the main brake assembly correspond to the holes on the main deck assembly.

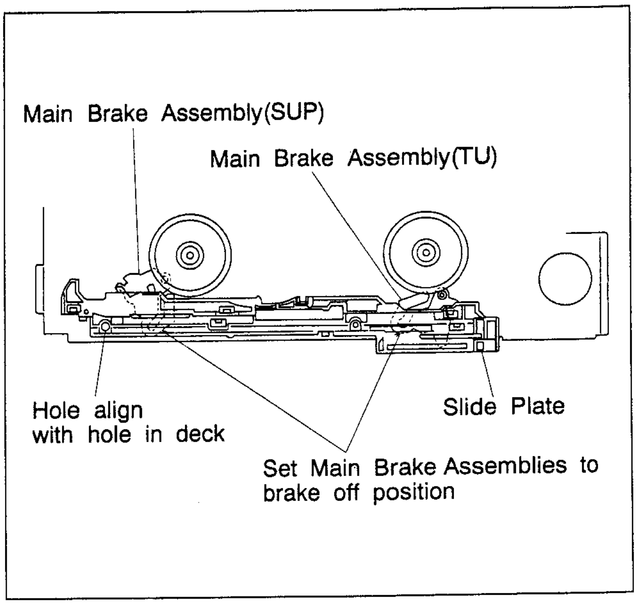

Main Brake Assembly(SUP)
Main Brake Assembly(TU)
Hole align with hole in deck
Slide Plate
Set Main Brake Assemblies to brake off position

Fig.2-6-4

2.6.5 Control Plate

(1) Reinstall the control plate so as to set the two positioning holes of it on the holes on the main deck assembly respectively and to set the positioning hole of the take-up lever on the hole of the main deck at the same time. When adjusting the hole position of the take-up lever,use a pair of tweezers to hold and move it since it is pulled by a tension spring.

(2) After reinstalling the control plate,fix it with the slit washer,control bracket and control bracket-2.

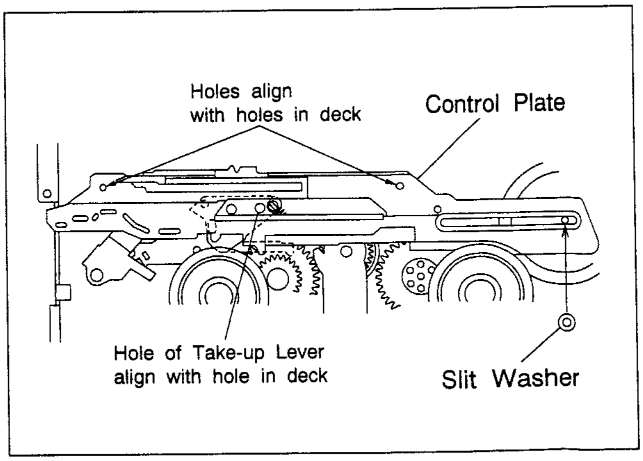

Holes align with holes in deck
Control Plate
Hole of Take-up Lever align with hole in deck
Slit Washer

Fig. 2-6-5

2.7 TAPE INTERCHANGEABILITY ADJUSTMENT

NOTE :
- *This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components(A/C head,upper/lower drum assembly,pole base assembly,etc).*
- *Before using costly alignment tape,use a spare tape and confirm correct operation of the tape transport.*

2.7.1 Tape pattern

(1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board.Use TP11(D.FF) on the PRE/REC board as a trigger.

(2) Playback the SP stairstep portion of the alignment tape [MHP].Confirm that the FM waveform appears as indicated in Fig.2-7-1.

(3) Set the manual tracking position by simultaneously pressing the CH "–" and "+" buttons.

(4) Operate the tracking adjustment (press the CH buttons during playback) and set for maximum playback FM waveform.

(5) By operating the CH button,vary the FMwaveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape as shown in Fig.2-7-1.

(6) When the FM waveform does not remain flat during this process,first slightly loosen the set screw located at the bottom of the guide rollers.Using the guide roller adjustment tool (Roller driver) ,adjust the supply and take-up guide rollers (refer to Fig.2-7-2) to obtain the correct waveform as indicated in Fig.2-7-3.

(7) By pressing the CH buttons several times,vary the FM waveform output from maximum to minimum (and vice versa) gradually,and confirm that the variation proceeds in flat shape, as shown in Fig.2-7-3.

(8) Next playback the EP stairstep portion of the alignment tape [MHP-L] and adjust the tracking control from maximum to minimum the FM waveform,confirm that FM waveform variation is always flat.

(9) Record the signal and play it back in both of the SP and EP mode,confirm that the FM waveform is flat in both mode.

(10) After adjustments,tighten the set screw of the guide rollers.

(11) Confirm that the tape wrinking does not occur at the roller upper or lower limits as indicated in Fig.2-7-4.

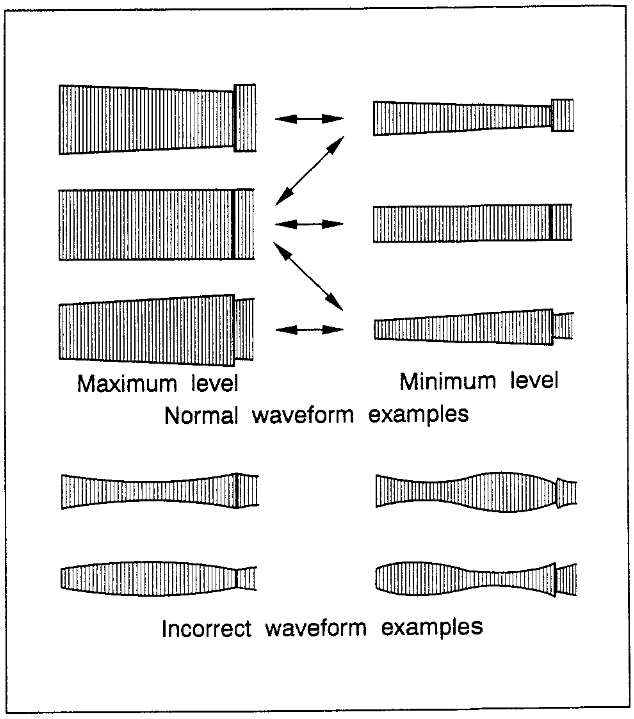


Fig. 2-7-1

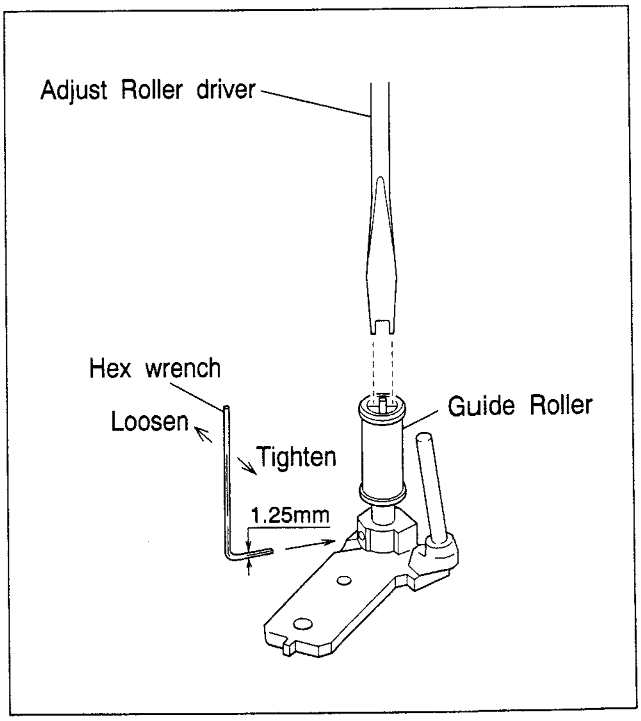


Fig. 2-7-2

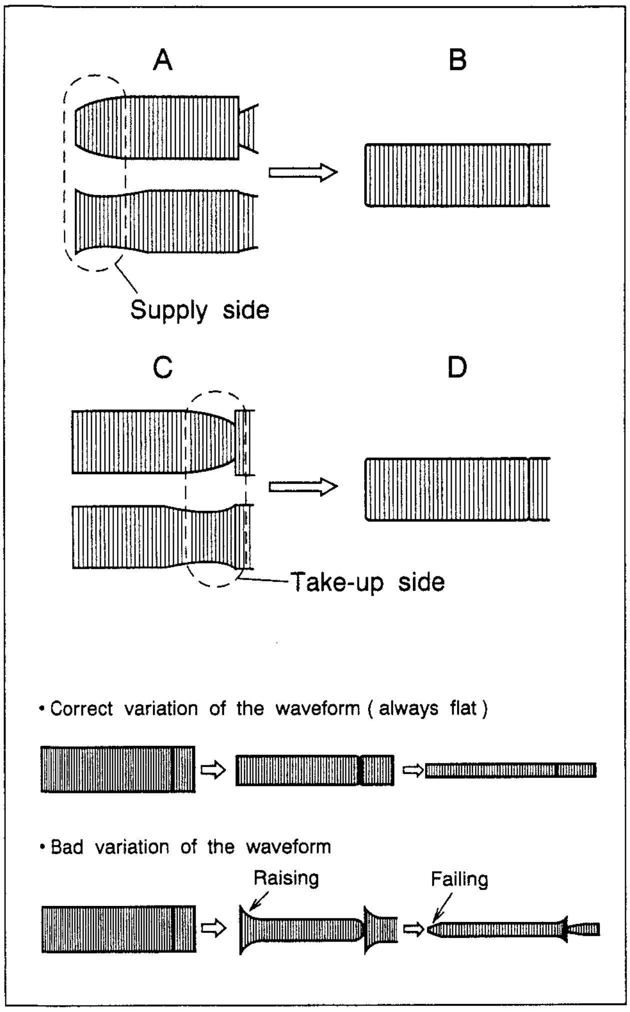

A
B
Supply side
C
D
Take-up side
• Correct variation of the waveform (always flat)
• Bad variation of the waveform
Raising
Failing

Fig. 2-7-3

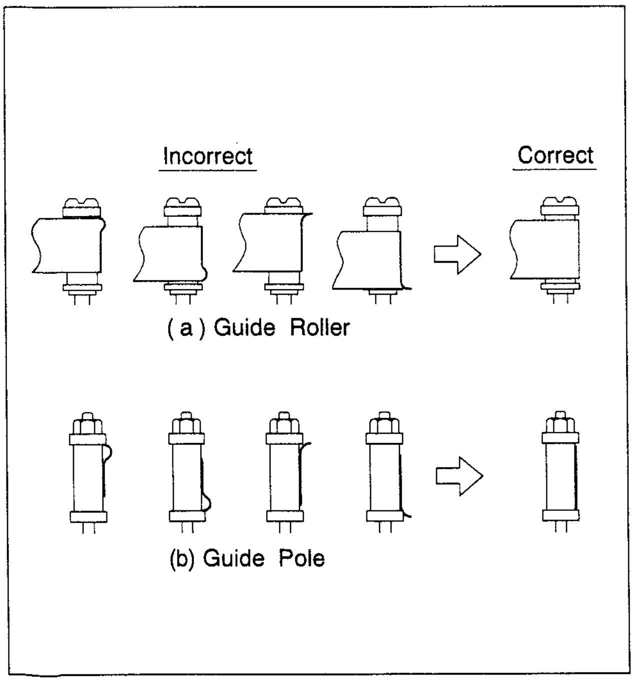

Incorrect
Correct
(a) Guide Roller
(b) Guide Pole

Fig. 2-7-4

2.7.2 A/C head height & azimuth

NOTE :
- *Temporarily set A/C head height as indicated in Fig. 2-5-4.*
- *Use spare tape to check the transport and confirm the tape is not scratched or damaged.*

1. Tilt

(1) Use spare tape and set for playback.
(2) Turn screw (3) clockwise to where the tape curls just slightly at the TU guide pole bottom flange as shown in Fig.2-7-5.
(3) Then slowly turn screw (3) counterclockwise to where the curling ceases.

2. Height

(1) Connect CH-1 of a dual trace oscilloscope to Audio Out.
(2) Connect CH-2 to TP401(CTL PULSE) of the Main board assembly and use the ALT mode.
(3) Playback the SP stairstep portion of the alignment tape [MHP].
(4) Adjust screws (1),(2) and (3) for maximum audio output and control pulse level.

3. Azimuth

(1) Connect the oscilloscope to Audio Out.
(2) Playback the SP stairstep portion of the alignment tape [MHP].
(3) Adjust screw (2) so that the audio output is both maximum and with minimum fluctuation.

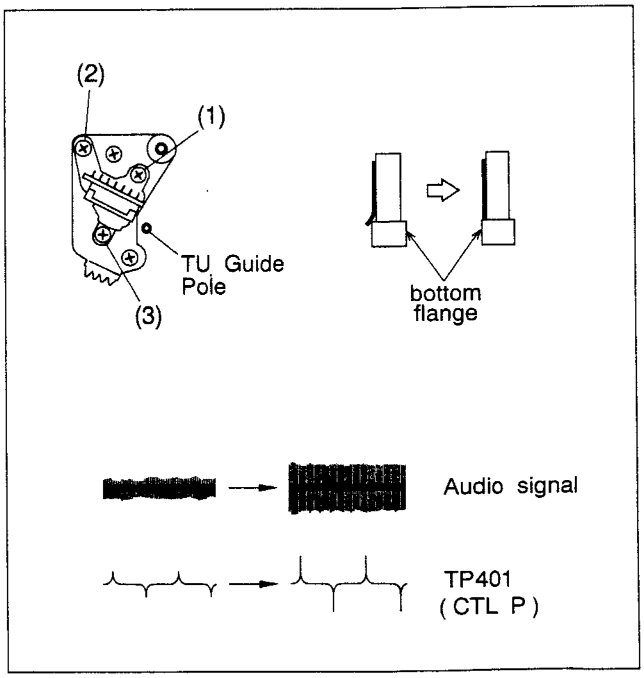

(2)
(1)
TU Guide Pole
(3)
bottom flange
Audio signal
TP401
(CTL P)

Fig. 2-7-5

2.7.3 A/C head phase(X-value)

(1) Connect the oscilloscope to TP6(PB FM) on the PRE/REC board.Use TP11(D.FF) on the PRE/REC board as a trigger.
(2) Playback the SP stairstep portion of the alignment tape [MHP].
(3) Set the neutral manual tracking position by simultaneously pressing the CH "–" and "+" buttons.
(4) If adjustment is required,slightly loosen screws (4) and (5). Set A/C head positioning tool on the A/C head adjusting boss as indicated in Fig.2-7-6.
(5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig.2-7-7.
(6) Tighten screw (5). Remove the tool and tighten screw (4).
(7) Eject the SP alighnment tape [MHP] and then re-insert the EP alignment tape [MHP-L].
(8) Playback the EP stairstep portion of the alignment tape [MHP-L].
(9) Set the neutral manual tracking position by simultaneously pressing the CH "–" and "+" buttons.
(10) Confirm maximum playback FM waveform output level as shown in Fig.2-7-7.
(11) If not maximum,slightly loosen the screws (4) and (5). Use the tool and adjust the head position for the nearest maximum point. Then tighten screws (4) and (5).

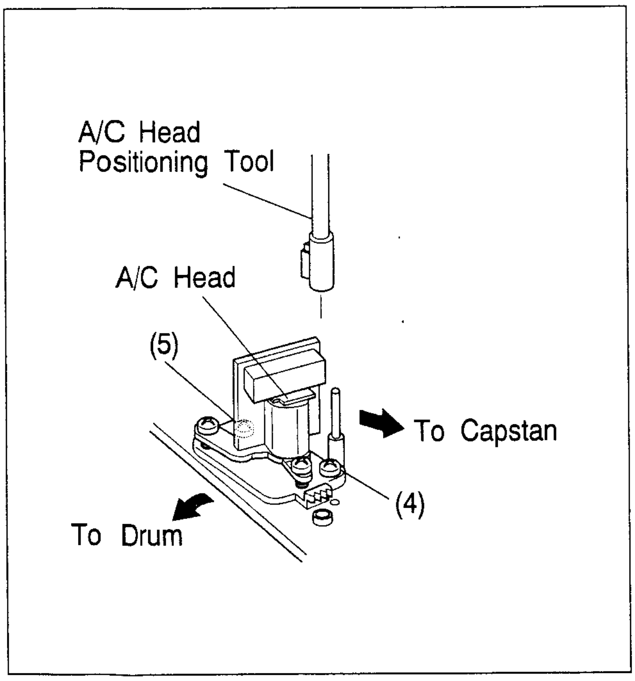


Fig. 2-7-6

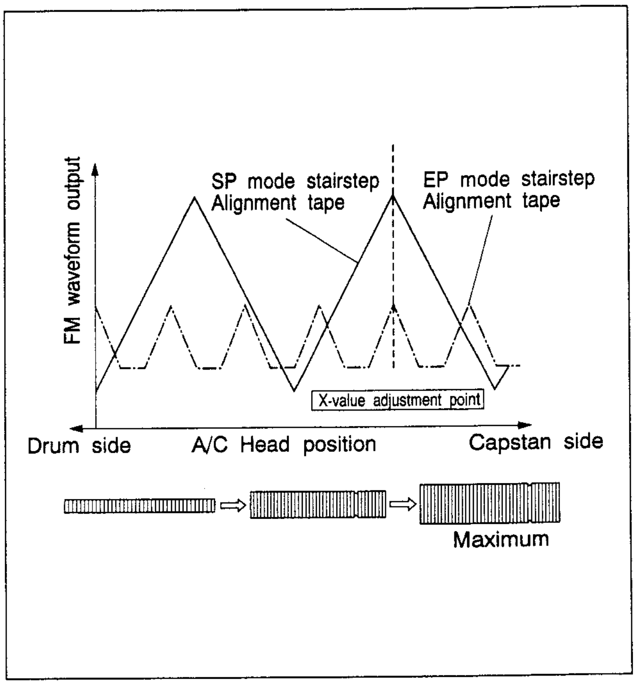


Fig. 2-7-7

2.7.4 EP mode auto tracking

NOTE : *Set VCR to the mode A by remote controller.*

(1) Playback the EP stairstep portion of the alignment tape [MHP-L].
(2) Confirm that the Automatic tracking indication [AT] stops flashing and remains on.
(3) Press the "D" button on the presetting unit [PTU94008] to turn off the Automatic tracking indication [AT].
(4) Press the "D" button again to change the mode to the EP interchangeability adjustment mode and confirm that Automatic tracking indication [AT] stops flashing and goes off.
(5) If the alignment tape ejects automatically, repeat the A/C head phase adjustment (X-value).

2.7.5 Tension pole position

(1) Set for playback mode using MECHANISM SERVICE MODE(See SECTION 1 DISASSEMBLY).
(2) Slightly loosen the screw (A) .
(3) Turn the adjust pin so that the tension arm assembly does not touch ϕ2.5 pole on the outside.
(4) Tighten the screw (A).
(5) After adjustment,use the back tension cassette gauge and set for the playback mode.
(6) Confirm reading of 29 to 46 g-cm.

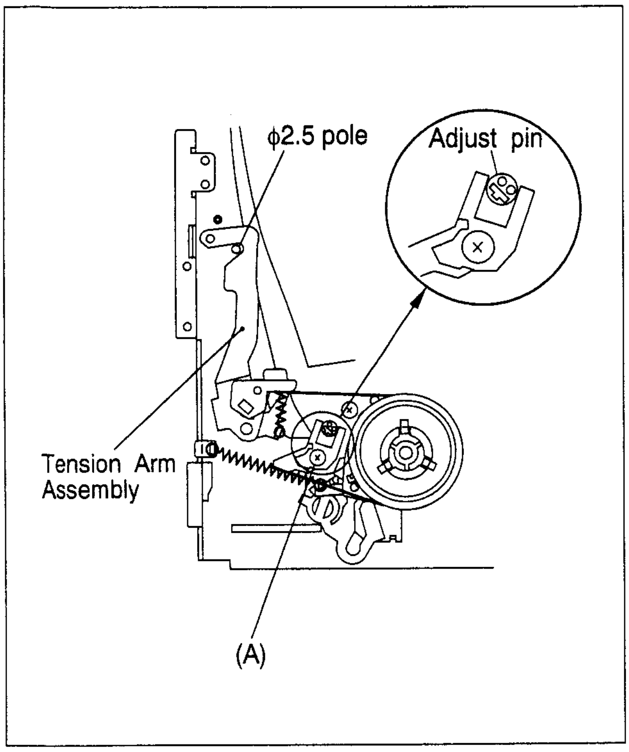


Fig. 2-7-8

2.7.6 Take-up torque

(1) Use the back tension cassette gauge and set for the playback mode.
(2) Confirm reading of 60 to 100 g•cm.

SECTION 3
ELECTRICAL ADJUSTMENT

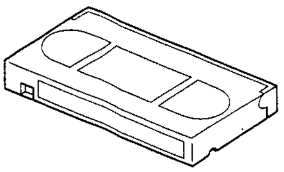
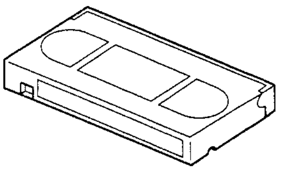
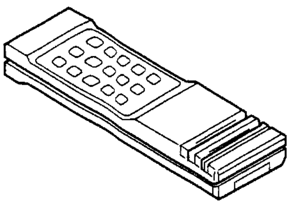
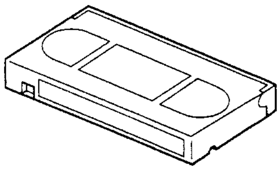
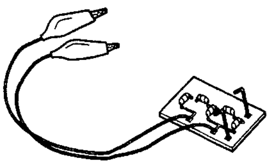
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is availagle.

3.1.1 Required test equipment

① Color television or monitor
② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
③ Frequency counter
④ Digital voltmeter
⑤ Signal generator: RF/IF sweep/maker
⑥ Signal generator: NTSC color bar, stairstep
⑦ Recording tape
⑧ Digit-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP,stairstep) MHP	Alignment tape (SP,color bar) MHV-2
	
Presetting unit PTU94008	Alignment tape (S-VHS SP/EP color bar) MH-1H
	
LPF PTU93006	
	

3.1.3 Color bar signal,color bar pattern

- Color bar signal

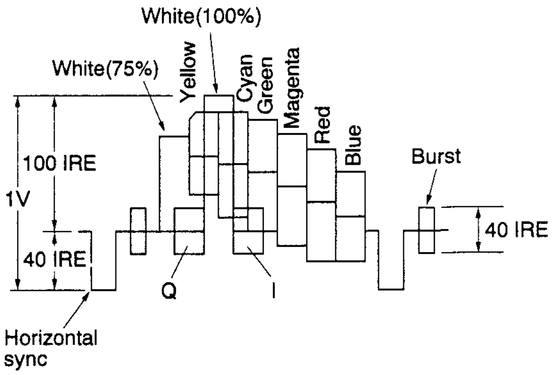
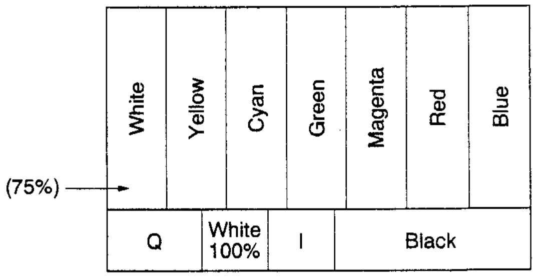


Fig.3-1-1 Color bar signal waveform

- Color bar pattern



White	Yellow	Cyan	Green	Magenta	Red	Blue
Q	White 100%	I	Black			

Fig.3-1-2 Color bar pattern

3.2 SWITCHING REGULATOR CIRCUIT

Note: • *Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.*

3.2.1 5V DC output voltage

Signal	•AUX •TUNER
Mode	•REC : SP
Equipment	•Digital voltmeter
Measurement point	•W201 (SWD 5V)
Adjustment part	•R885 (SWD 5V)
Specification	•5.22 ± 0.10V DC

(1) Connect a digital voltmeter to B201 (left of the R885) and GND.
(2) Adjust R885 for 5.22 ± 0.10V DC.

3.3 SERVO CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Set VCR to the mode A by remote controller.*
• *Use only buttons "E" and "F", depressing other buttons during adjustment may cause adjustment errors.*

3.3.1 PB switching point

Signal	•Alignment tape [MHP],Stairstep
Mode	•PB,Automatic tracking OFF
Equipment	•Oscilloscope
Measurement point	•VIDEO OUT TERMINAL
Trigger slope (-)	•TP11(DRUM FF), [PRE/REC BOARD]
Adjustment tool	•Presetting unit
Specification	•6.5 ± 0.5H

(1) Connect an oscilloscope to VIDEO OUT TERMINAL and external trigger from TP11 (negative slope).
(2) Playback the stairstep signal of the alignment tape.
(3) Set the tracking control to the center position by simultaneously pressing the CH "+" and "−" buttons.
(4) Adjust by pressing "E" or "F" buttons of presetting unit for position the trigger point 6.5 ± 0.5 H from V.sync.
(5) Depress the STOP button.

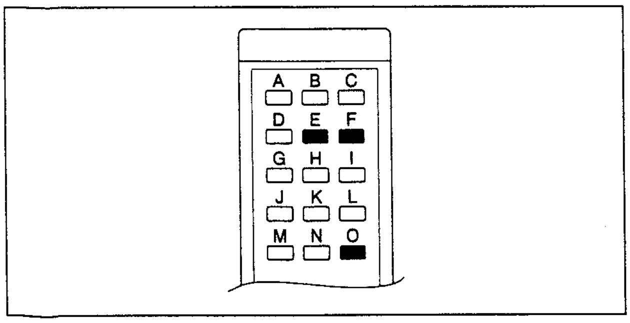


Fig.3-3-1 Presetting unit

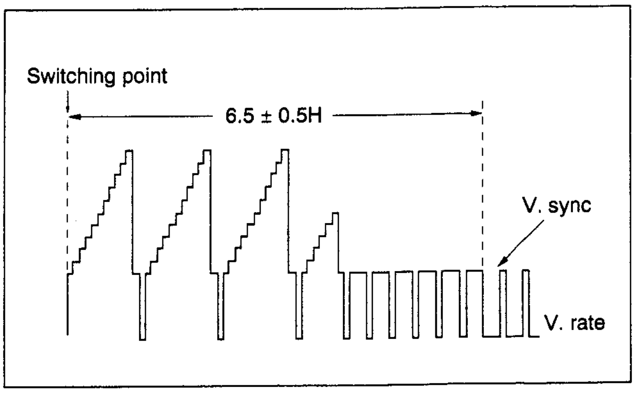


Fig.3-3-2 PB switching point

Alternate method
(1) Playback the stairstep signal of the alignment tape.
(2) Press the "O" button of the presetting unit.
(3) Confirm that VCR mode becomes STOP mode.

3.3.2 Slow tracking preset

Signal	•Tuner or color bar
Mode	•SP/EP, REC → PB(SLOW) Automatic tracking OFF
Equipment	•TV-Monitor
Adjustment tool	•Presetting unit
Specification	•Minimum noise

Notes: • *Set VCR to the mode A by remote controller.*
• *Use only buttons "B" and "C", depressing other buttons during adjustment may cause adjustment errors.*

(1) Record a color bar signal in the SP mode.
(2) Playback recorded signal on the FWD slow mode.
(3) Set the tracking control to the center position by simultaneously pressing the CH "+" and "−" buttons.
(4) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "B " or "C " buttons of the presetting unit.
(5) Depress the STOP button.
(6) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
(7) Repeat steps (2) to (6) in REV slow mode.
(8) Repeat steps (1) to (7) in EP mode.

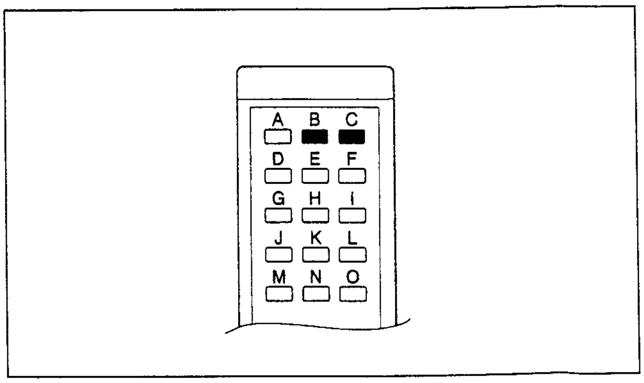


Fig.3-3-3 Presetting unit

3.4 VIDEO CIRCUIT

Notes:
- *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
- *VIDEO circuit adjustments are performed by the EVR system by use of the presetting unit and digit-key remote controller.*
- *S-INPUT means Y/C separated video signal in the chart.*
- *Set VCR to the mode A by remote controller.*
- *Set DYNAMIC CONTRAST to off mode. (HR-S7200U only)*

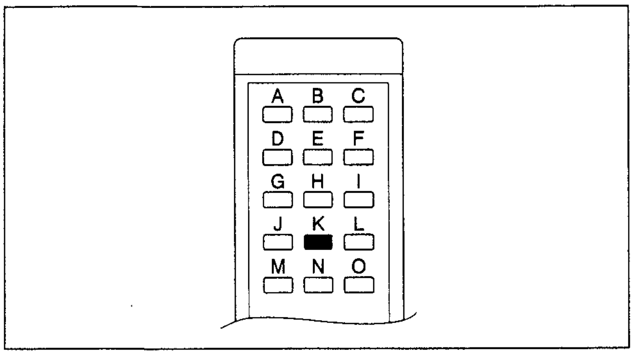


Fig.3-4-1 Presetting unit

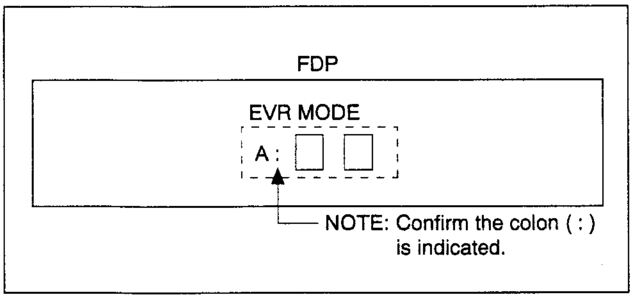


Fig.3-4-2 EVR mode

3.4.1 AGC·Y level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 11
Specification	• 1.00 ± 0.03Vp-p (terminated)

(1) Connect an oscilloscope to VIDEO OUT TERMINAL.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
(3) Set "A : 11" pressing 1 digit key twice of the remote controller.
(4) Adjust CH "−" or "+" button for 1.00 ± 0.03 Vp-p.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

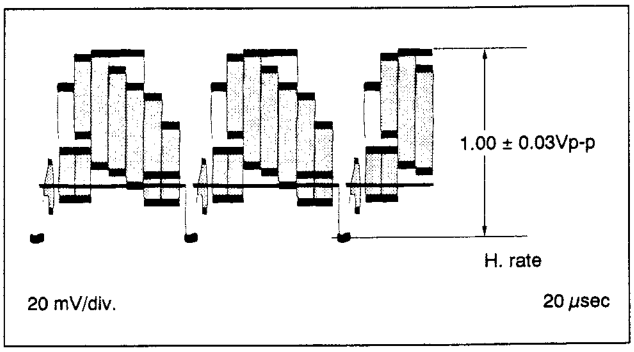


Fig. 3-4-3 EE Y level

3.4.2 White/dark clip (S-VHS/VHS)

Signal	• Color bar
Mode	• EE • S-VHS/VHS
Equipment	• Oscilloscope
Measurement point	• CN202 pin 8 (W/D CLIP)
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 14
Specification	• WHITE CLIP : 110 ± 4%(S-VHS) 90 ± 4%(VHS) DARK CLIP : 70 ± 8%(S-VHS) 45 ± 8%(VHS)

(1) Connect an oscilloscope to CN202 pin 8.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
(3) Set "A : 14" pressing 1 and 4 digit keys of the remote controller.
(4) Adjust CH "−" or "+" button for 110 ± 4%(S-VHS), 90 ± 4%(VHS) white clip and 70 ± 8%(S-VHS), 45 ± 8%(VHS) dark clip as shown in Fig.3-4-4.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

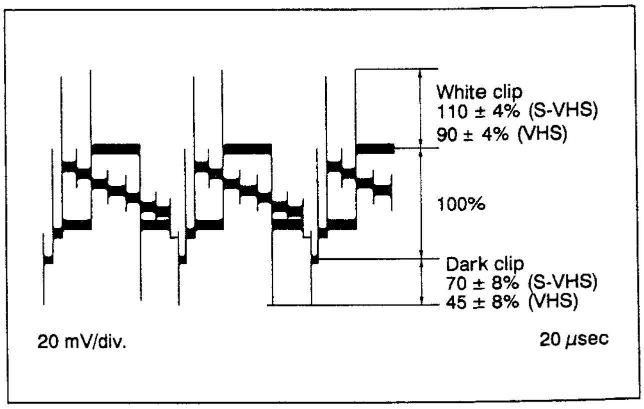


Fig.3-4-4 Whate/dark clip

3.4.3 Sub emphasis input level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• CN202 pin 17 (SUB EMPHASIS)
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 15
Specification	• 400 ± 20 mVp-p

(1) Connect an oscilloscope to CN202 pin 17.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
(3) Set "A : 15" pressing 1 and 5 digit keys of the remote controller.
(4) Adjust CH "–" or "+" button of the remote controller for 400 ± 20 mVp-p.
(5) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

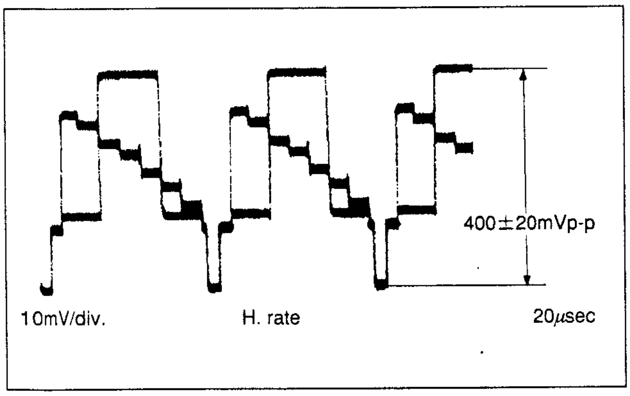


Fig. 3-4-5 Sub emphasis input level

3.4.4 PB Y level (S-VHS/VHS)

Signal	• Alignment tape [MHV-2, MH-1H], • Color bar
Mode	• PB
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Adjustment tool	• Presetting unit • Digit-key remote controller
EVR mode	• A : 11
Specification	• 1.00 ± 0.03Vp-p (terminated)

(1) Connect an oscilloscope to VIDEO OUT TERMINAL.
(2) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
(3) Set "A : 11" pressing 1 digit key twice of the remote controller.
(4) Playback the color bar signal of the alignment tape. (MH-1H and MHV-2)
(5) Adjust CH "–" or "+" button for 1.00 ± 0.03Vp-p as shown in Fig.3-4-6.
(6) Set normal VCR mode by pressing "K" button of the presetting unit again so adjustment data is memorized.

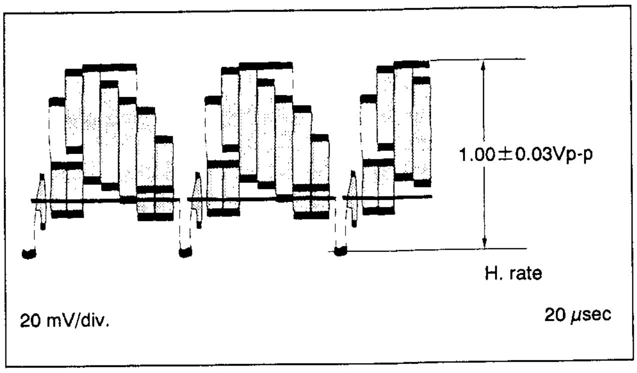


Fig.3-4-6 PB Y level

3.4.5 SP/EP REC color level

Signal	• Alignment tape [MH-1H]Color bar
Mode	• PB (SP/EP) • REC → PB : SP/EP • S-VHS
Equipment	• Oscilloscope
Measurement point	• PB color out
Trigger slope (–)	• TP11 (DRUM FF) [PRE/REC board]
Adjustment tool	• Presetting unit • Digit-key remote controller • LPF fixture
EVR mode	• A : 2
Specification	• "B" x 130 ± 5% : SP • "B" x 100 ± 5% : EP

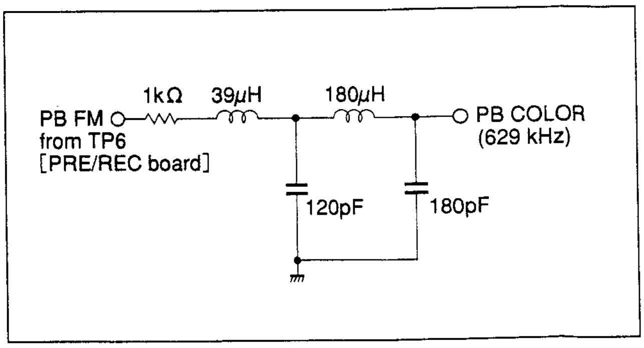


Fig. 3-4-7 LPF

(1) Use a LPF as shown in Fig. 3-4-7.
(2) Playback the SP (EP) color bar signal of MH-1H alignment tape.
(3) Set the tracking of the Front panel to the Auto tracking off position by simultaneously pressing the CH "−" and "+" buttons.
(4) Adjust by pressing the CH "−" or "+" buttons of the Front panel for maximum level of the color waveform and make a note of the higher color level "B".
(5) Press the STOP/EJECT button and eject the MH-1H alignment tape.
(6) Set EVR mode by pressing "K" button of the presetting unit more than 2 seconds.
(7) Set "A : 2" by pressing 2 numeric key of the remote controller.
(8) Record a color bar signal in SP (EP) mode, and playback recorded color bar signal.
(9) Before recording, adjust CH "−" or "+" button of the remote controller so that the higher level channel becomes 130 ± 5% : SP (120 ± 5% : EP) of the note "B" level during playback as shown in Fig. 3-4-8.
(10) Set normal VCR mode by pressing "K" button again so adjustment data is memorized.

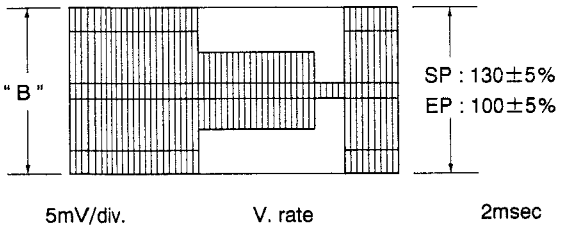


Fig. 3-4-8 REC color level

3.4.6 S-VHS VIDEO EQ

Signal	• S INPUT • Video sweep
Mode	• REC → PB : SP/EP • S-VHS • AUto tracking : OFF
Equipment	• Oscilloscope
Measurement point	• Y OUT TERMINAL
Adjustment prat	• R113 (S-SP VIDEO EQ) [PRE/REC board] • R114 (S-EP VIDEO EQ) [PRE/REC board]
Specification	• 3.2 ± 0.2 scale R113 : SP • 2.8 ± 0.2 scale R114 : EP

(1) Connect an oscilloscope to Y OUT TERMINAL.
(2) Record a video sweep signal in S-VHS SP mode, then play it back.
(3) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R113 so that 3.58 MHz marker level becomes 3.2 ± 0.2 scale divisions.
(4) Record a video sweep signal in S-VHS EP mode, then play it back.
(5) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R114 so that 3.58 MHz marker level becomes 2.8 ± 0.2 scale divisions.

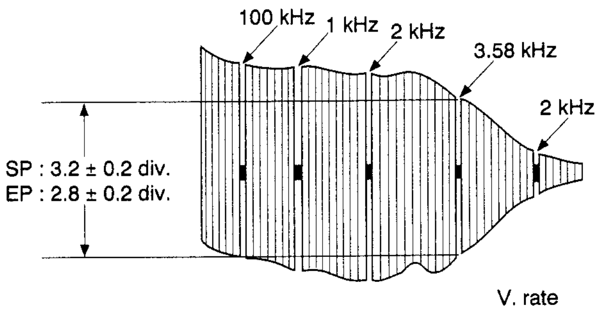


Fig. 3-4-9 S-VHS VIDEO EQ

Alternate method

(1) Record a color bar signal in S-VHS SP mode,
(2) Play it back to observe the picture and adjust R113 for best resolution, without impaired S/N.
(3) So after adjustment, confirm black or white spot.
(4) Record a color bar signal in S-VHS EP mode.
(5) Play it back to observe the picture and adjust R114 for best resolution, without impaired S/N.
(6) So after adjustment, confirm black or white spot.

3.4.7 AFC CLOCK

Note: *For the following adjustments, use 1 : 1 probe with input capacitance less than 100 pF.*

Signal	• No signal
Mode	• EE • AUX
Equipment	• Frequency counter
Measurement point	• TP301 round (Fh) or IC301 pin 15
Adjustment part	• R309 (Fh)
Specification	• 15.73 ± 0.10 kHz

(1) Connect the frequency counter to TP301 round and GND.
(2) Adjust R309 for 15.73 ± 0.10 kHz.

3.5 ON SCREEN CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Set VCR to the mode A by remote controller.*

3.5.1 Dot clock

Signal	• Color bar or tuner
Mode	• EE
Equipment	• TV-monitor
Adjustment tool	• Presetting unit [PTU94008]
Specification	• Charactor center

(1) Press the MENU button and display the onscreen character.
(2) Observe TV-monitor and center position of character by pressing "H" button of the presetting unit.

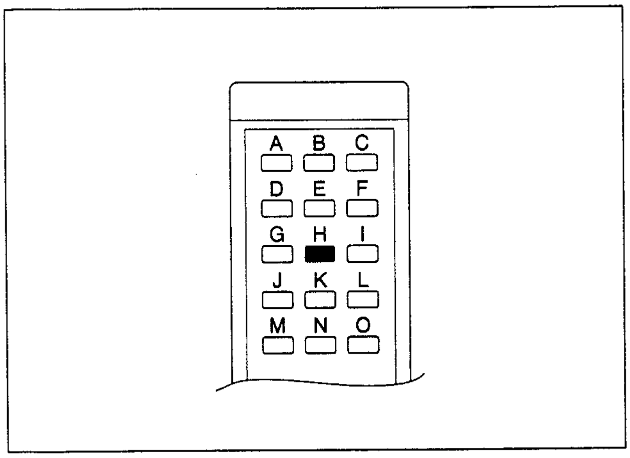


Fig.3-5-1 Dot clock

3.6 SYSCON CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *When performing this adjustment,remove the MECHANISM assy.*

3.6.1 Timer clock

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC601 pin 64
Adjustment part	• C601 (TIMER CLOCK)
Specification	• 1024.008 ± 0.001 Hz [976.5549 ± 0.0010 usec]

(1) Connect the frequency counter to IC601 pin 64 and GND.
(2) Connect the short wire between IC601 pin 33 and IC601 pin 63.
(3) Short the leads of capacitor C610 once in order to reset IC601.
(4) Disconnect the short wire then connect it again quickly.
(5) Adjust C601 for 1024.008 ± 0.001 Hz.
(976.5549 ± 0.0010 usec)

3.7 AUDIO CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the PRE/REC BOARD.*

3.7.1 REC FM level

Signal	• AUX • VIDEO : Color bar • Audio : No signal
Mode	• REC → PB : EP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP53 (A. PB FM)
Trigger slope (−)	• TP11 (DRUM FF)
Adjustment part	• R216 (A. REC FM LEVEL)
Specification	• 90 ± 10 mVp-p

(1) Connect an oscilloscope to TP53.
(2) Record a color bar signal without an audio signal in S-VHS EP mode then playback.
(3) Adjust R216 for 90 mVp-p playback level of higher channel level before recording.
(4) Confirm that the lower channel level is more than 60 mVp-p.

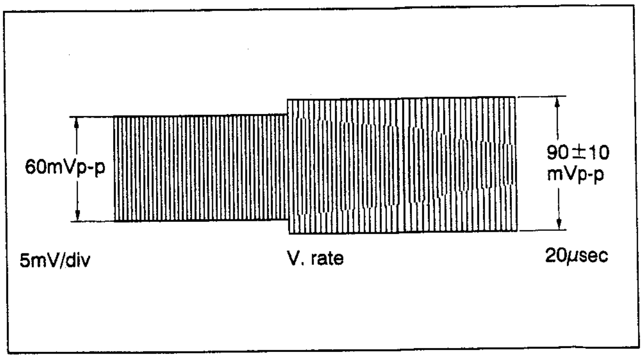


Fig. 3-7-1 Audio REC FM level

3.7.2 REC level CTL

Signal	• AUX • 1 kHz, –8 dBs
Mode	• EE
Equipment	• Audio oscillator
Adjustment tool	• R67 (AUDIO LEVEL) [MAIN board]
Specification	•–8 dBs ± 2 dBs

(1) Connect an audio oscillator to AUDIO OUTPUT terminal.
(2) Set the Hi-Fi REC LEVEL CONTROL to "MANUAL" position on the on screen mode.
(3) Adjust R67 so that the audio output level becomes –8 dbs ± 2 dbs.

3.8 TUNER CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the IF UNIT.*

3.8.1 RF AGC

Signal	• TV broadcasting
Mode	• Tuner
Equipment	• TV monitor
Measurement point	• IF UNIT
Adjustment tool	• IF VR
Specification	• Minimum noise

Note: *Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs bue to strong electrical fields.*

(1) Adjust IF VR to minimize noise or streaks on the TV screen.
(2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

3.9 Y/C SEP CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the Y/C SEP BOARD.*

3.9.1 Digital I/O level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• JP102 pin 6 (Y/V To SEP) • JP102 pin 8 (SEPAD Y1) [DIGITAL SUB board]
Adjustment part	• R68 (DIGITAL I/O LEVEL)
Specification	• Equal level

(1) Connect the channel (CH-1) of a dual trace oscilloscope to JP102 pin 6 and the other channel (CH-2) to JP102 pin 8.
(2) Set the oscilloscope for DUAL mode, and overlap the waveform.
(3) Adjust R68 for equal Y levels.

3.10 DEMODULATOR CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the DEMODULATOR BOARD.*

3.10.1 Stereo VCO adjustment

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC101 pin 23
Adjustment part	• R126 (STEREO VCO)
Specification	• 15.73 ± 0.01 kHz

(1) Connect the 20 kΩ resistor between IC101 pin 10 and IC101 pin 13.
(2) Adjust R126 for 15.73 ± 0.05 kHz.

3.5 ON SCREEN CIRCUIT

Notes:
- *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
- *Set VCR to the mode A by remote controller.*

3.5.1 Dot clock

Signal	• Color bar or tuner
Mode	• EE
Equipment	• TV-monitor
Adjustment tool	• Presetting unit [PTU94008]
Specification	• Charactor center

(1) Press the MENU button and display the onscreen character.
(2) Observe TV-monitor and center position of character by pressing "H" button of the presetting unit.

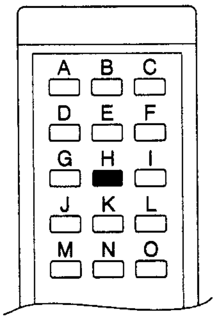


Fig.3-5-1 Dot clock

3.6 SYSCON CIRCUIT

Notes:
- *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
- *When performing this adjustment,remove the MECHANISM assy.*

3.6.1 Timer clock

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC601 pin 64
Adjustment part	• C601 (TIMER CLOCK)
Specification	• 1024.008 ± 0.001 Hz [976.5549 ± 0.0010 usec]

(1) Connect the frequency counter to IC601 pin 64 and GND.
(2) Connect the short wire between IC601 pin 33 and IC601 pin 63.
(3) Short the leads of capacitor C610 once in order to reset IC601.
(4) Disconnect the short wire then connect it again quickly.
(5) Adjust C601 for 1024.008 ± 0.001 Hz.
(976.5549 ± 0.0010 usec)

3.7 AUDIO CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the PRE/REC BOARD.*

3.7.1 REC FM level

Signal	• AUX • VIDEO : Color bar • Audio : No signal
Mode	• REC → PB : EP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP53 (A. PB FM)
Trigger slope (–)	• TP11 (DRUM FF)
Adjustment part	• R216 (A. REC FM LEVEL)
Specification	• 90 ± 10 mVp-p

(1) Connect an oscilloscope to TP53.
(2) Record a color bar signal without an audio signal in S-VHS EP mode then playback.
(3) Adjust R216 for 90 mVp-p playback level of higher channel level before recording.
(4) Confirm that the lower channel level is more than 60 mVp-p.

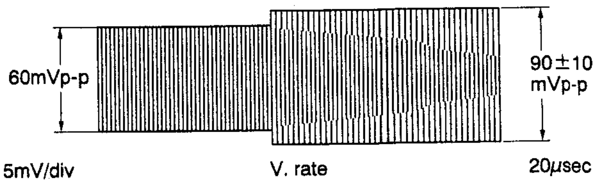


Fig. 3-7-1 Audio REC FM level

3.7.2 REC level CTL

Signal	• AUX • 1 kHz, –8 dBs
Mode	• EE
Equipment	• Audio oscillator
Adjustment tool	• R67 (AUDIO LEVEL) [MAIN board]
Specification	•–8 dBs ± 2 dBs

(1) Connect an audio oscillator to AUDIO OUTPUT terminal.
(2) Set the Hi-Fi REC LEVEL CONTROL to "MANUAL" position on the on screen mode.
(3) Adjust R67 so that the audio output level becomes –8 dbs ± 2 dbs.

3.8 TUNER CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the IF UNIT.*

3.8.1 RF AGC

Signal	• TV broadcasting
Mode	• Tuner
Equipment	• TV monitor
Measurement point	• IF UNIT
Adjustment tool	• IF VR
Specification	• Minimum noise

Note: *Adjust IF VR (RF AGC) to correct for excess noise in the picture or when streaks cross interference occurs bue to strong electrical fields.*

(1) Adjust IF VR to minimize noise or streaks on the TV screen.
(2) Adjust for noisy picture with strong signal. Then adjust until noise just disappears. Select other channels to confirm proper pick-up of channels.

3.9 Y/C SEP CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the Y/C SEP BOARD.*

3.9.1 Digital I/O level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• JP102 pin 6 (Y/V To SEP) • JP102 pin 8 (SEPAD Y1) [DIGITAL SUB board]
Adjustment part	• R68 (DIGITAL I/O LEVEL)
Specification	• Equal level

(1) Connect the channel (CH-1) of a dual trace oscilloscope to JP102 pin 6 and the other channel (CH-2) to JP102 pin 8.
(2) Set the oscilloscope for DUAL mode, and overlap the waveform.
(3) Adjust R68 for equal Y levels.

3.10 DEMODULATOR CIRCUIT

Note: *Unless otherwise specified, all measurement point and adjustment parts are located on the DEMODULATOR BOARD.*

3.10.1 Stereo VCO adjustment

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• IC101 pin 23
Adjustment part	• R126 (STEREO VCO)
Specification	• 15.73 ± 0.01 kHz

(1) Connect the 20 kΩ resistor between IC101 pin 10 and IC101 pin 13.
(2) Adjust R126 for 15.73 ± 0.05 kHz.

3.10.2 Low pass filter adjustment

Signal	• No signal
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• IC101 pin 14
Adjustment part	• R124 (FILTER)
Specification	• Minimize

(1) Connect a oscilloscope to IC101 pin 14.
(2) Adjust R124 for minimum waveform.

3.10.3 Stereo separation adjustment

<Factor Method>

Signal	• Sweep generator output (96 dBμ, 1 kHz)
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• IC101 pin 29
Adjustment part	• R107 (SEPARATION-1) • R109 (SEPARATION-2)
Specification	• Minimize

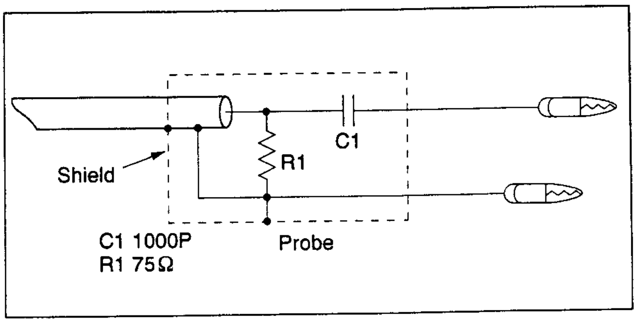


Fig. 3-10-1 Sweeper probe

(1) Use a sweeper probe shown in Fig. 3-10-1.
(2) Supply 300 Hz L-only modulated IF signal to IF terminal of U/V tuner (front end).
(3) Connect an oscilloscope to IC101 pin 29.
(4) Adjust R107 for minimum output level.
(5) Supply 5 kHz L-only modulated IF signal to IF terminal of U/V tuner (front end).
(6) Connect an oscilloscope to IC101 pin 29.
(7) Adjust R109 for minimum output level.

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions

The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Units of components on the schematic diagram

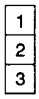
Unless otherwise specified.

1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

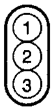
2. Indications of control voltage

AUX : Active only at high.
$\overline{\text{AUX}}$ or AUX(L) : Active at low.

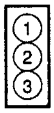
3. Interpreting Connector indications



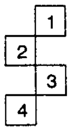
Removable connector



Wire soldered directly on board



Non-removable Board connector

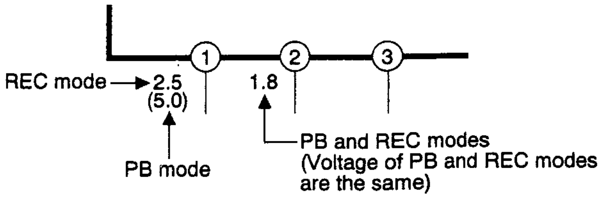


Board to Board

⟶
⟵ } Connected pattern on board
⟷

4. Voltage measurement

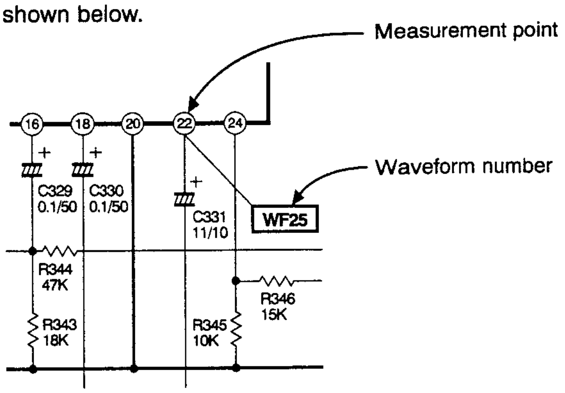
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
   — : Unmeasurable or unnecessary to measure.
2) Audio circuis
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test charts in the E-E mode.
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.


REC mode
2.5
(5.0)
PB mode
1.8
PB and REC modes
(Voltage of PB and REC modes are the same)
1
2
3

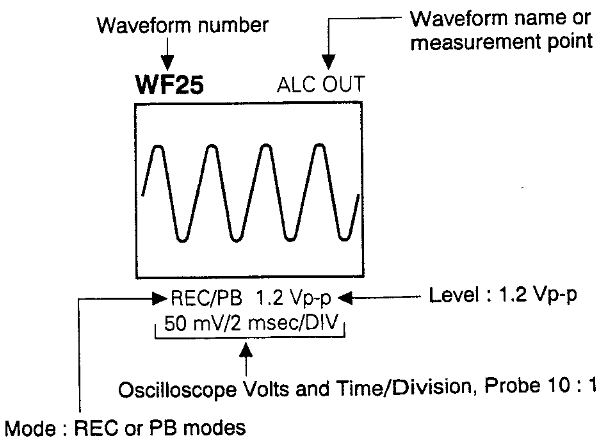
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode.
   PB : Alignment tape, colour bar SP mode, normal VHS mode.
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode.
   PB : REC then playback it.
3) Movie Camera circuits
   Measured using a correctly illuminated grey scale or colour bar test chatrs in the E-E mode.
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.

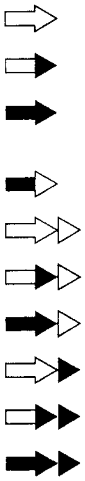

Measurement point
Waveform number
16
18
20
22
24
C329
0.1/50
C330
0.1/50
C331
11/10
WF25
R344
47K
R343
18K
R345
10K
R346
15K

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
50 mV/2 msec/DIV
Level : 1.2 Vp-p
Oscilloscope Volts and Time/Division, Probe 10 : 1
Mode : REC or PB modes

6. Signal path Symbols

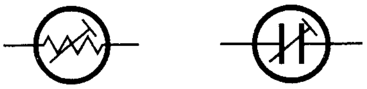
The arrows indicate the signal path as follows.



- Playback signal path
- Playback and recording signal path
- Recording signal path (including E-E signal path)
- Y signal path
- Colour (Chroma) signal path
- R or R-Y signal path
- B or B-Y signal path
- Capstan servo path
- Drum servo path
- Reel servo path

7. Indication of the parts for adjustments

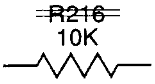
The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

Or the symbol number is struck off by two lines as below.



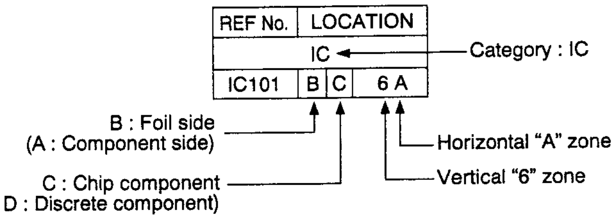
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

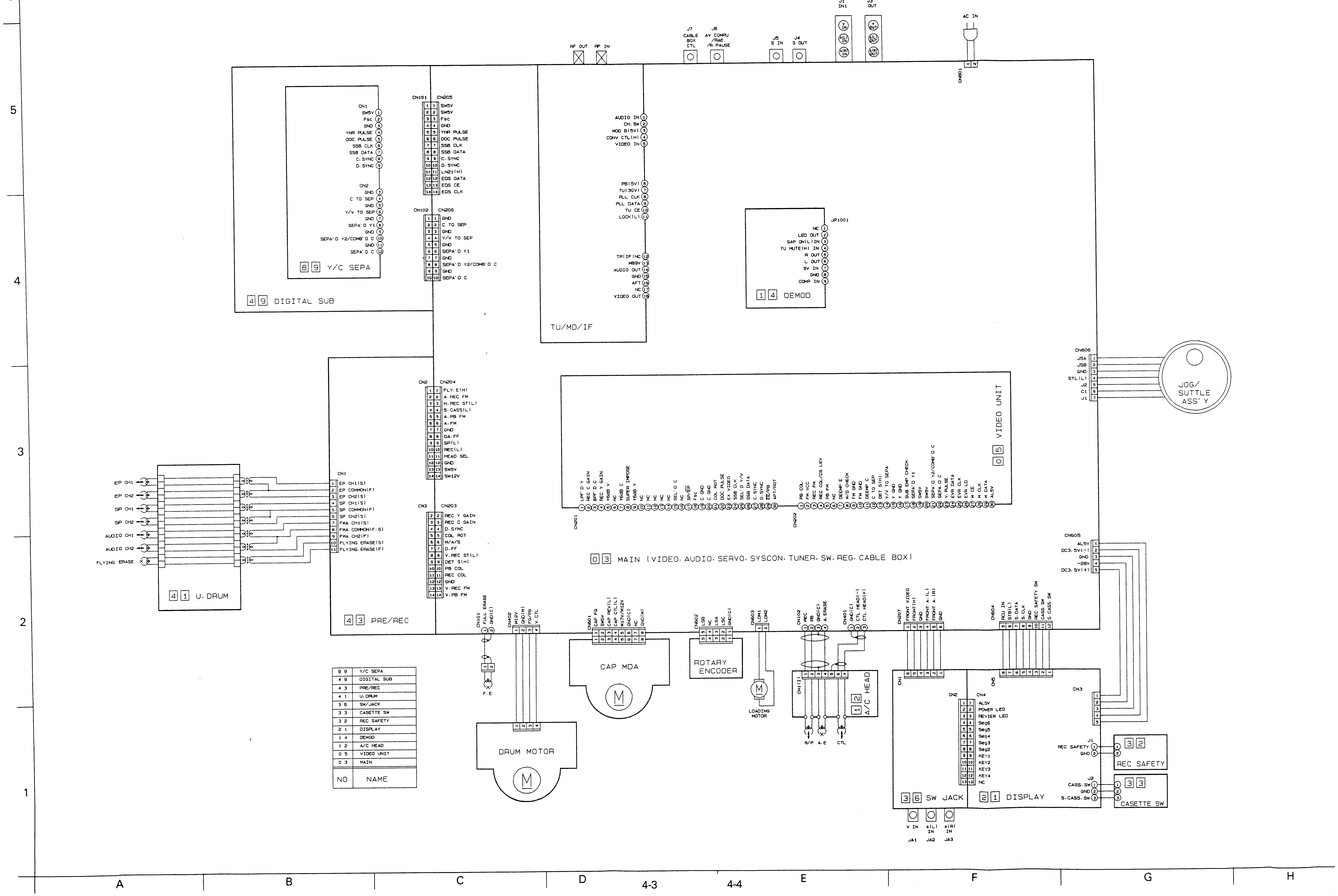
Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
Horizontal "A" zone
C : Chip component
D : Discrete component)
Vertical "6" zone

Notes:

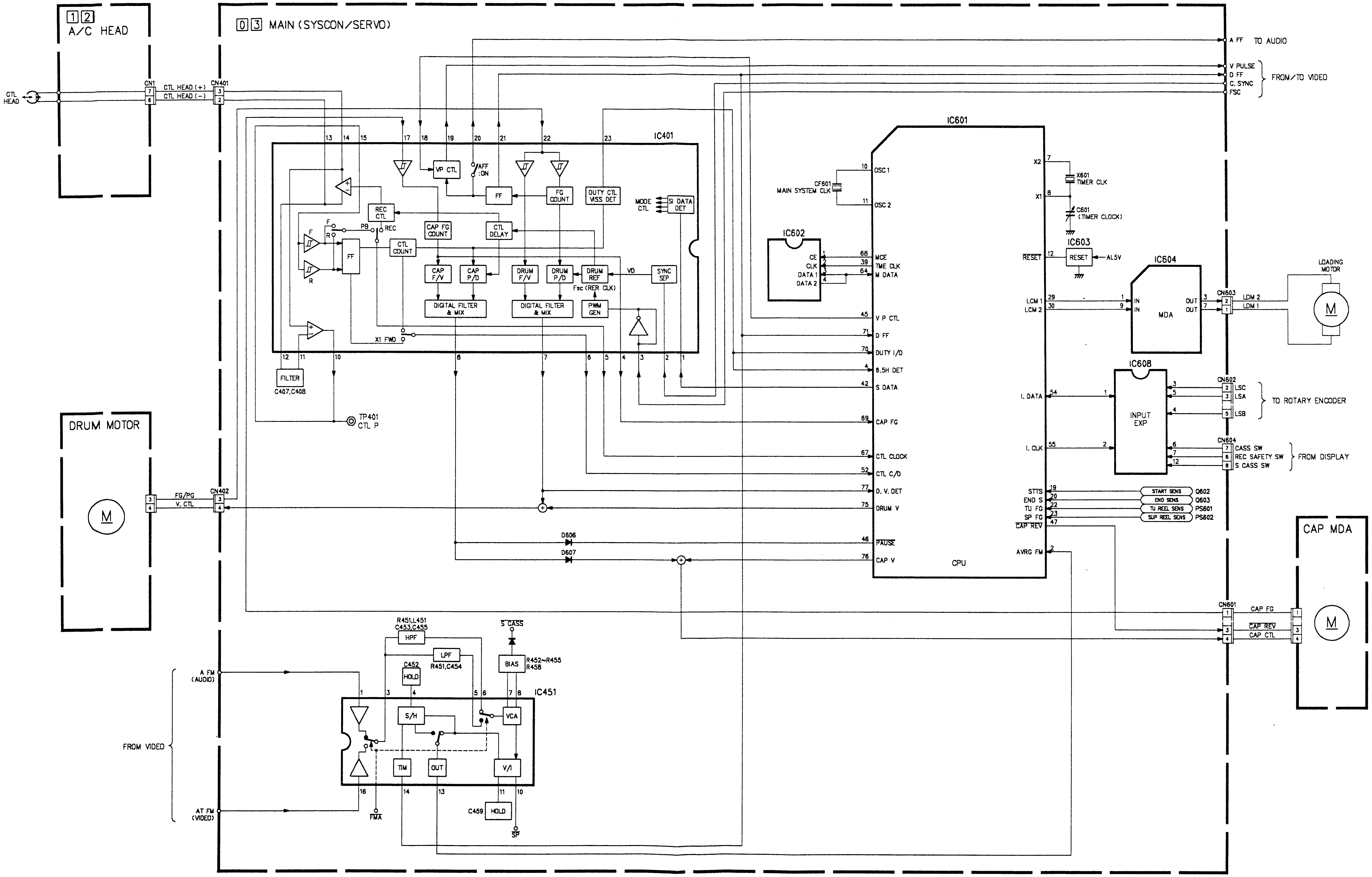
1) **For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).**
2) **For repairing SMC (Surface Mounted Components), please refer to the VIDEO SERVICE GUIDE No. VTS81001.**

4.1 BOARD INTERCONNECTIONS


6
5
4
3
2
1
A
B
C
D
E
F
G
H
RF OUT
RF IN
J7
CABLE BOX CTL
J6
AV COMPU /RAE /R. PAUSE
J5
S IN
J4
S OUT
J1
IN1
V IN
A(L) IN
A(R) IN
J3
OUT
V OUT
A(L) OUT
A(R) OUT
AC IN
CN801
1
2
CN1
SW5V ①
Fsc ②
GND ③
YNR PULSE ④
DOC PULSE ⑤
SSB CLK ⑥
SSB DATA ⑦
C. SYNC ⑧
D. SYNC ⑨
CN2
GND ③
C TO SEP ④
GND ⑤
Y/V TO SEP ⑥
GND ⑦
SEPA' D Y1 ⑧
GND ⑨
SEPA' D Y2/COMB' D C ⑩
GND ⑪
SEPA' D C ⑫
8 9 Y/C SEPA
4 9 DIGITAL SUB
CN101
CN205
1 SW5V
2 SW5V
3 Fsc
4 GND
5 YNR PULSE
6 DOC PULSE
7 SSB CLK
8 SSB DATA
9 C. SYNC
10 D. SYNC
11 LN21(H)
12 EDS DATA
13 EDS CE
14 EDS CLK
CN102
CN206
1 GND
2 C TO SEP
3 GND
4 Y/V TO SEP
5 GND
6 SEPA' D Y1
7 GND
8 SEPA' D Y2/COMB' D C
9 GND
10 SEPA' D C
AUDIO IN ①
CH. SW ②
MOD B(5V) ③
CONV CTL(H) ④
VIDEO IN ⑤
PB(5V) ⑥
TU(30V) ⑦
PLL CLK ⑧
PLL DATA ⑨
TU CE ⑩
LOCK(L) ⑪
TP(IF)NC ⑫
MB9V ⑬
AUDIO OUT ⑭
GND ⑮
AFT ⑯
NC ⑰
VIDEO OUT ⑱
TU/MD/IF
JP1001
NC ①
LED OUT ②
SAP ON(L)IN ③
TU MUTE(H) IN ④
R OUT ⑤
L OUT ⑥
9V IN ⑦
GND ⑧
COMP IN ⑨
1 4 DEMOD
CN606
JSA 1
JSB 2
GND 3
STL(L) 4
J2 5
C1 6
J1 7
JOG/ SUTTLE ASS' Y
0 5 VIDEO UNIT
CN201
① LPF' D Y
② REC C GAIN
③ BPF' D C
④ REC Y GAIN
⑤ +6dB V
⑥ NC
⑦ +6dB C
⑧ SUPER IMPOSE
⑨ +6dB Y
⑩ NC
⑪ NC
⑫ NC
⑬ NC
⑭ NC
⑮ SEL' D C
⑯ NC
⑰ SP/EP
⑱ Fsc
⑲ C GND
⑳ C GND
(21) COL ROT
(22) DOC PULSE
(23) EX VIDEO
(24) SSB CLK
(25) SEL' D Y/V
(26) SSB DATA
(27) C. SYNC
(28) D. SYNC
(29) EE/PB
(30) APT/ROT
CN202
① PB COL
② FM VCC
③ REC FM
④ REC COL/CS LEV
⑤ PB FM
⑥ NC
⑦ DEEMP E
⑧ W/D CHECK
⑨ FM GND
⑩ FM GND
⑪ DEEMP C
⑫ C TO SEP
⑬ DET S(H)
⑭ Y/V TO SEPA
⑮ Y GND
⑯ Y GND
⑰ SUB EMP CHECK
⑱ SEPA' D Y1
⑲ SW5V
⑳ SW5V
(21) SEPA' D Y2/COMB' D C
(22) SEPA D C
(23) V. PULSE
(24) EVR DATA
(25) EVR CLK
(26) EVR LD
(27) M CE
(28) M CLK
(29) M DATA
(30) AL5V
0 3 MAIN (VIDEO. AUDIO. SERVO. SYSCON. TUNER. SW. REG. CABLE BOX)
CN605
AL5V 1
DC3. 5V(−) 2
GND 3
−28V 4
DC3. 5V(+) 5
EP CH1
EP CH2
SP CH1
SP CH2
AUDIO CH1
AUDIO CH2
FLYING ERASE
4 1 U. DRUM
CN1
1 EP CH1(S)
2 EP COMMON(F)
3 EP CH2(S)
4 SP CH1(S)
5 SP COMMON(F)
6 SP CH2(S)
7 FMA CH1(S)
8 FMA COMMON(F. S)
9 FMA CH2(F)
10 FLYING ERASE(S)
11 FLYING ERASE(F)
CN2
CN204
1 FLY. E(H)
2 A. REC FM
3 H. REC ST(L)
4 S. CASS(L)
5 A. PB FM
6 A. FM
7 GND
8 DA. FF
9 SP(L)
10 REC(L)
11 HEAD SEL
12 GND
13 SW5V
14 SW12V
CN3
CN203
2 REC Y GAIN
3 REC C GAIN
4 D. SYNC
5 COL ROT
6 M/A/S
7 D. FF
8 V. REC ST(L)
9 DET S(H)
10 PB COL
11 REC COL
12 GND
13 V. REC FM
14 V. PB FM
4 3 PRE/REC
CN101
① FULL ERASE
② GND(C)
F. E
CN402
1 M12V
2 GND(M)
3 FG/PG
4 V. CTL
DRUM MOTOR
M
CN601
1 CAP FG
2 SW5V
3 CAP REV(L)
4 CAP CTL(L)
5 M17V/M12V
6 GND(C)
7 NC
8 GND(M)
CAP MDA
M
CN602
5 LSB
4 NC
3 LSA
2 LSC
1 GND(C)
ROTARY ENCODER
CN603
1 LDM1
2 LDM2
M
LOADING MOTOR
CN102
① REC
② PB
③ GND(C)
④ A. ERASE
CN401
① GND(C)
② CTL HEAD(−)
③ CTL HEAD(+)
CN1(I)
1 2 A/C HEAD
R/P
A. E
CTL
CN207
1 FRONT VIDEO
2 FRONT(H)
3 GND
4 FRONT A. (L)
5 FRONT A. (R)
6 GND
CN1
CN604
5 RCU IN
6 STB(L)
7 S. DATA
8 S. CLK
9 GND
10 REC SAFETY SW
11 CASS. SW
12 S. CASS. SW
CN5
CN2
CN4
1 AL5V
2 POWER LED
3 REVIEW LED
4 Seg6
5 Seg5
6 Seg4
7 Seg3
8 Seg2
9 KEY1
10 KEY2
11 KEY3
12 KEY4
13 NC
CN3
J1
REC SAFETY ①
GND ②
3 2 REC SAFETY
J2
CASS. SW ①
GND ②
S. CASS. SW ③
3 3 CASETTE SW
3 6 SW JACK
2 1 DISPLAY
V IN
A(L) IN
A(R) IN
JA1
JA2
JA3

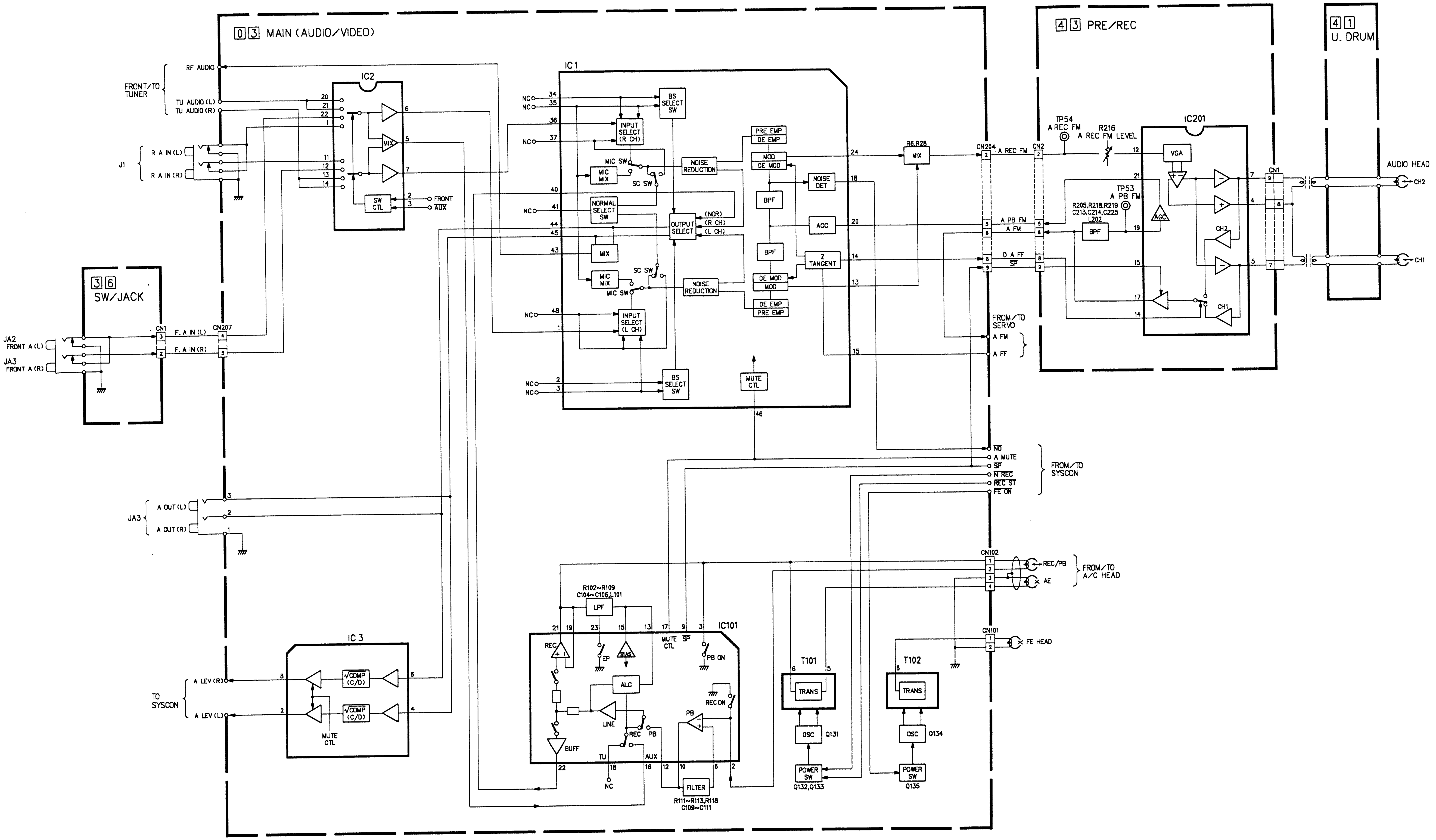
NO	NAME
8 9	Y/C SEPA
4 9	DIGITAL SUB
4 3	PRE/REC
4 1	U. DRUM
3 6	SW/JACK
3 3	CASETTE SW
3 2	REC SAFETY
2 1	DISPLAY
1 4	DEMOD
1 2	A/C HEAD
0 5	VIDEO UNIT
0 3	MAIN

4.2 SYSTEM CONTROL BLOCK DIAGRAM



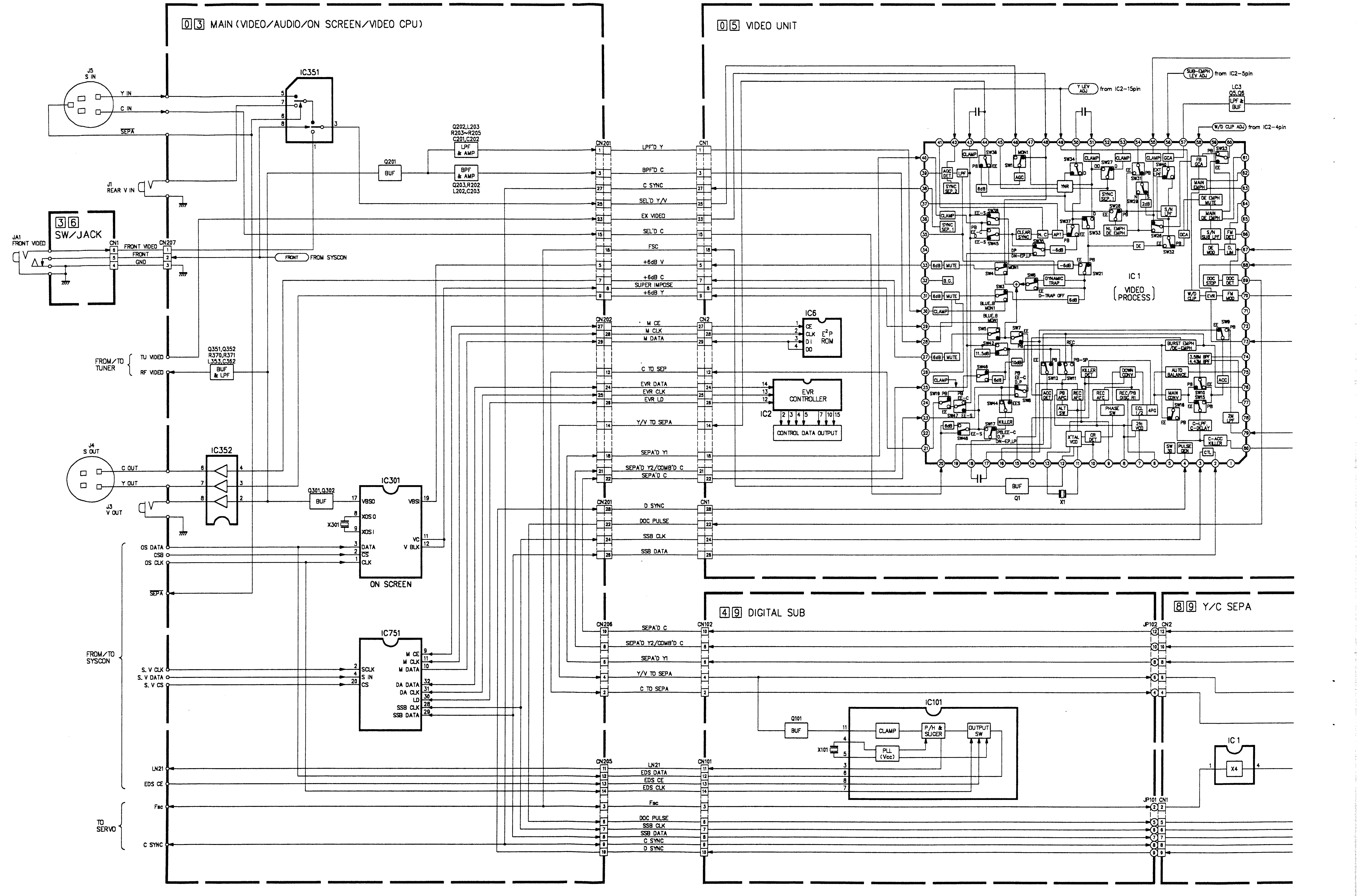
12 A/C HEAD
CTL HEAD
CN1
CTL HEAD (+)
CTL HEAD (−)
CN401
03 MAIN (SYSCON/SERVO)
IC401
VP CTL
AFF :ON
FF
FG COUNT
DUTY CTL VISS DET
MODE CTL
SI DATA DET
REC CTL
PB
REC
CAP FG COUNT
CTL DELAY
CTL COUNT
CAP F/V
CAP P/D
DRUM F/V
DRUM P/D
DRUM REF
VD
SYNC SEP
Fsc (REF CLK)
DIGITAL FILTER & MIX
DIGITAL FILTER & MIX
PWM GEN
X1 FWD
FILTER
C407,C408
TP401 CTL P
DRUM MOTOR
FG/PG
V. CTL
CN402
D606
D607
A FF TO AUDIO
V PULSE
D FF
C. SYNC
FSC
FROM/TO VIDEO
IC601
OSC 1
OSC 2
CF601 MAIN SYSTEM CLK
X2
X1
X601 TIMER CLK
C601 (TIMER CLOCK)
IC602
CE
CLK
DATA 1
DATA 2
MCE
TME CLK
M DATA
RESET
IC603
RESET
AL5V
IC604
LCM 1
LCM 2
IN
IN
MDA
OUT
OUT
CN603
LDM 2
LDM 1
LOADING MOTOR
V P CTL
D FF
DUTY I/O
8.5H DET
S DATA
CAP FG
CTL CLOCK
CTL C/D
D. V. DET
DRUM V
PAUSE
CAP V
CPU
IC608
I. DATA
I. CLK
INPUT EXP
CN602
LSC
LSA
LSB
TO ROTARY ENCODER
CN604
CASS SW
REC SAFETY SW
S CASS SW
FROM DISPLAY
STTS
END S
TU FG
SP FG
CAP REV
AVRG FM
START SENS
END SENS
TU REEL SENS
SUP REEL SENS
Q602
Q603
PS601
PS602
CAP MDA
CN601
CAP FG
CAP REV
CAP CTL
R451,L451 C453,C455
HPF
LPF
R451,C454
C452
HOLD
S CASS
BIAS
R452~R455 R458
IC451
S/H
VCA
TIM
OUT
V/I
C459
HOLD
A FM (AUDIO)
AT FM (VIDEO)
FROM VIDEO
FMA
SP

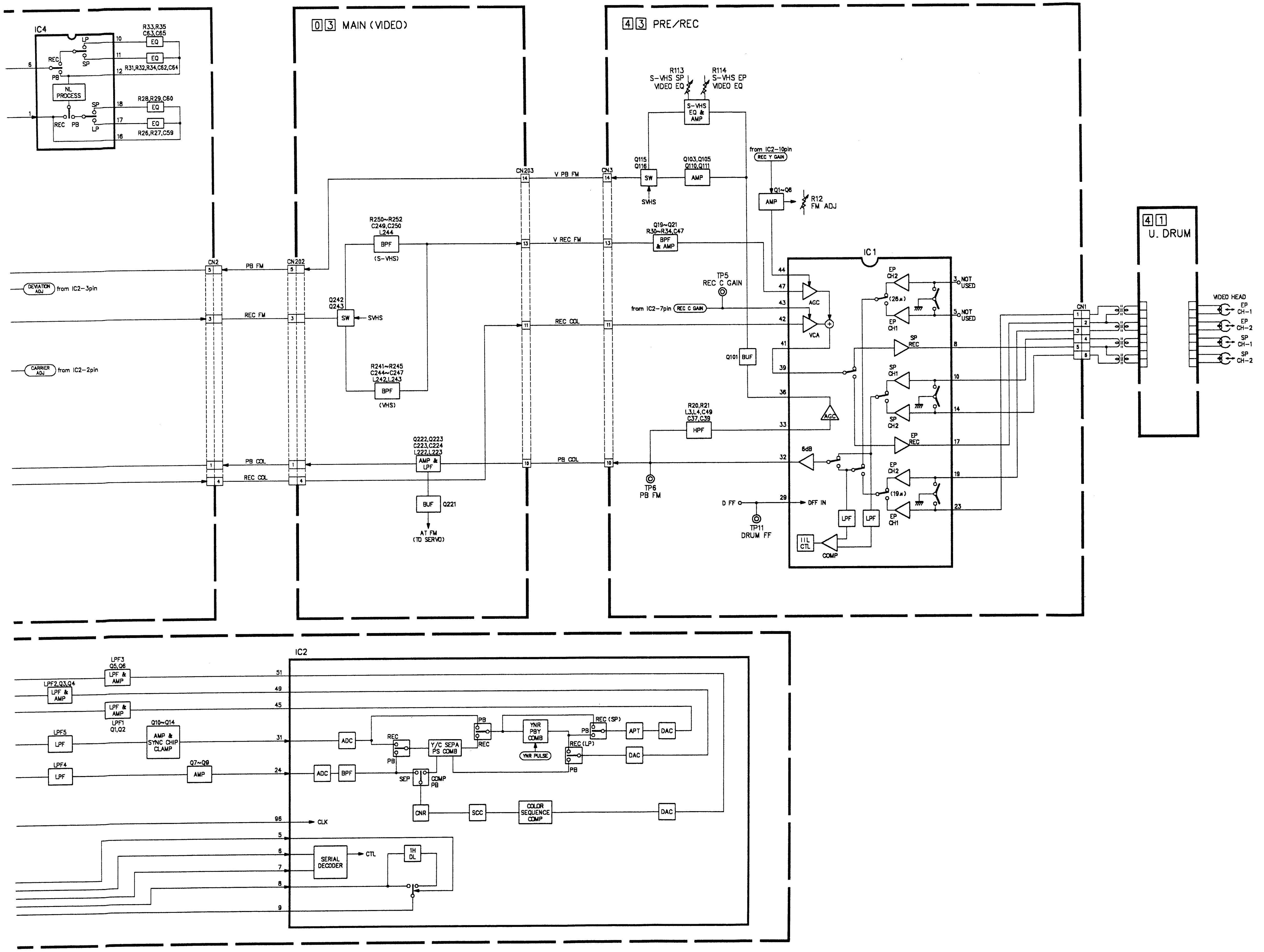
4.3 AUDIO BLOCK DIAGRAM



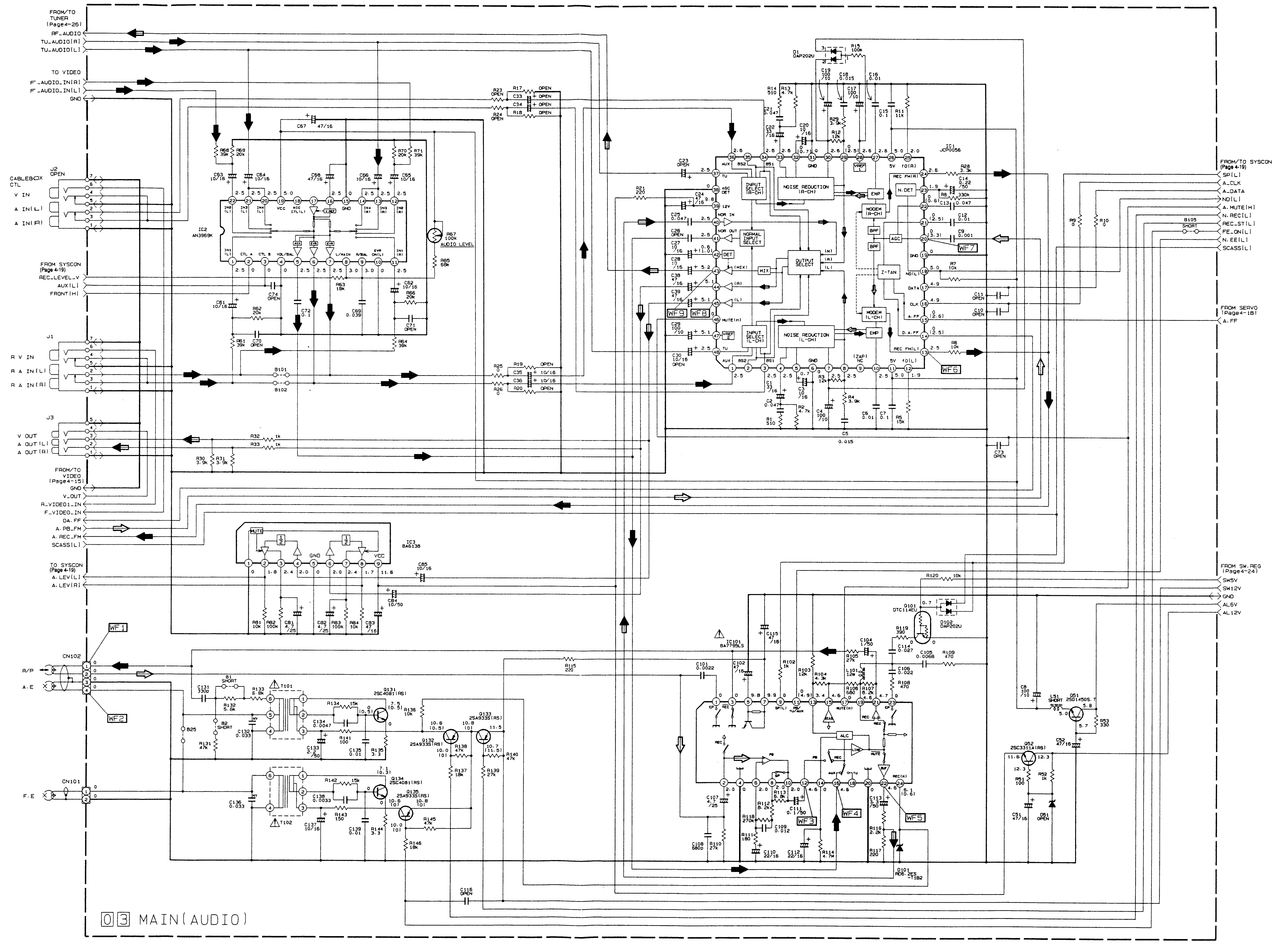
03 MAIN (AUDIO/VIDEO)
36 SW/JACK
43 PRE/REC
41 U. DRUM
FRONT/TO TUNER
RF AUDIO
TU AUDIO (L)
TU AUDIO (R)
J1
R A IN (L)
R A IN (R)
IC2
MIX
SW CTL
FRONT
AUX
JA2 FRONT A (L)
JA3 FRONT A (R)
CN1
CN207
F. A IN (L)
F. A IN (R)
IC1
BS SELECT SW
INPUT SELECT (R CH)
INPUT SELECT (L CH)
MIC SW
SC SW
MIC MIX
NORMAL SELECT SW
OUTPUT SELECT
(NOR)
(R CH)
(L CH)
MIX
NOISE REDUCTION
PRE EMP
DE EMP
MOD
DE MOD
NOISE DET
BPF
AGC
Z TANGENT
MUTE CTL
R6,R28
MIX
CN204
CN2
A REC FM
A PB FM
A FM
D A FF
SP
TP54 A REC FM
R216 A REC FM LEVEL
TP53 A PB FM
R205,R218,R219 C213,C214,C225 L202
BPF
IC201
VGA
AGC
CH2
CH1
CN1
AUDIO HEAD
CH2
CH1
FROM/TO SERVO
A FM
A FF
NC
FROM/TO SYSCON
A MUTE
N REC
REC ST
FE ON
JA3
A OUT (L)
A OUT (R)
CN102
REC/PB
AE
FROM/TO A/C HEAD
CN101
FE HEAD
R102~R109 C104~C106,L101
LPF
IC101
REC
EP
BIAS
MUTE CTL
PB ON
ALC
REC ON
PB
LINE
REC
BUFF
TU
AUX
NC
FILTER
R111~R113,R118 C109~C111
T101
TRANS
OSC
Q131
POWER SW
Q132,Q133
T102
TRANS
OSC
Q134
POWER SW
Q135
IC3
√COMP (C/D)
MUTE CTL
TO SYSCON
A LEV (R)
A LEV (L)

4.4 VIDEO BLOCK DIAGRAM


03 MAIN (VIDEO/AUDIO/ON SCREEN/VIDEO CPU)
05 VIDEO UNIT
49 DIGITAL SUB
89 Y/C SEPA
36 SW/JACK
J5 S IN
Y IN
C IN
SEPA
J1 REAR V IN
JA1 FRONT VIDEO
FRONT VIDEO
FRONT
GND
FRONT FROM SYSCON
FROM/TO TUNER
TU VIDEO
RF VIDEO
J4 S OUT
C OUT
Y OUT
J3 V OUT
FROM/TO SYSCON
OS DATA
CSB
OS CLK
S. V CLK
S. V DATA
S. V CS
LN21
EDS CE
TO SERVO
Fsc
C SYNC
IC351
Q201 BUF
Q202,L203 R203~R205 C201,C202 LPF & AMP
BPF & AMP Q203,R202 L202,C203
Q351,Q352 R370,R371 L353,C352 BUF & LPF
IC352
Q301,Q302 BUF
IC301
ON SCREEN
X301
IC751
CN201
CN202
CN206
CN205
CN207
CN1
CN2
CN101
CN102
LPF'D Y
BPF'D C
C SYNC
SEL'D Y/V
EX VIDEO
SEL'D C
FSC
+6dB V
+6dB C
SUPER IMPOSE
+6dB Y
M CE
M CLK
M DATA
C TO SEP
EVR DATA
EVR CLK
EVR LD
Y/V TO SEPA
SEPA'D Y1
SEPA'D Y2/COMB'D C
SEPA'D C
D SYNC
DOC PULSE
SSB CLK
SSB DATA
LN21
EDS DATA
EDS CE
EDS CLK
IC6 E2P ROM
IC2 EVR CONTROLLER
CONTROL DATA OUTPUT
IC1 VIDEO PROCESS
Y LEV ADJ from IC2-15pin
SUB-EMPH LEV ADJ from IC2-5pin
W/D CLIP ADJ from IC2-4pin
LC3 Q5,Q6 LPF & BUF
Q1 BUF
X1
IC101
Q101 BUF
CLAMP
P/H & SLICER
OUTPUT SW
PLL (Vcc)
X101
JP101
JP102
IC 1 X4
A
B
C
D
E
F
G
H
1
2
3
4
5
6


IC4
LP
SP
REC
PB
NL PROCESS
EQ
R33,R35
C63,C65
R31,R32,R34,C62,C64
R28,R29,C60
R26,R27,C59
10
11
12
18
17
16
6
1
0 3 MAIN (VIDEO)
4 3 PRE/REC
4 1 U. DRUM
CN2
CN202
CN203
CN3
CN1
PB FM
REC FM
PB COL
REC COL
V PB FM
V REC FM
REC COL
PB COL
DEVIATION ADJ from IC2-3pin
CARRIER ADJ from IC2-2pin
R250~R252
C249,C250
L244
BPF
(S-VHS)
Q242
Q243
SW
SVHS
R241~R245
C244~C247
L242,L243
BPF
(VHS)
Q222,Q223
C223,C224
L222,L223
AMP & LPF
BUF
Q221
AT FM (TO SERVO)
R113
S-VHS SP VIDEO EQ
R114
S-VHS EP VIDEO EQ
S-VHS EQ & AMP
Q115
Q116
SW
SVHS
Q103,Q105
Q110,Q111
AMP
from IC2-10pin
REC Y GAIN
Q1~Q6
AMP
R12
FM ADJ
Q19~Q21
R30~R34,C47
BPF & AMP
TP5
REC C GAIN
from IC2-7pin
REC C GAIN
Q101
BUF
R20,R21
L3,L4,C49
C37,C39
HPF
TP6
PB FM
D FF
TP11
DRUM FF
IC1
44
47
43
42
41
39
36
33
32
29
AGC
VCA
AGC
6dB
DFF IN
LPF
LPF
IIL CTL
COMP
EP CH2
EP CH1
(26μ)
SP REC
SP CH1
SP CH2
EP REC
EP CH2
EP CH1
(19μ)
3 NOT USED
5 NOT USED
8
10
14
17
19
23
1
2
3
4
5
6
VIDEO HEAD
EP CH-1
EP CH-2
SP CH-1
SP CH-2
LPF3
Q5,Q6
LPF & AMP
LPF2,Q3,Q4
LPF & AMP
LPF & AMP
LPF1
Q1,Q2
Q10~Q14
AMP & SYNC CHIP CLAMP
LPF5
LPF
LPF4
LPF
Q7~Q9
AMP
IC2
51
49
45
31
24
96
5
6
7
8
9
ADC
ADC
BPF
REC
PB
Y/C SEPA
PS COMB
SEP
COMP
PB
PB
REC
YNR
PBY
COMB
YNR PULSE
REC (SP)
PB
REC (LP)
PB
APT
DAC
DAC
DAC
CNR
SCC
COLOR SEQUENCE COMP
CLK
SERIAL DECODER
CTL
1H DL
I
J
K
L
M
N
O
P

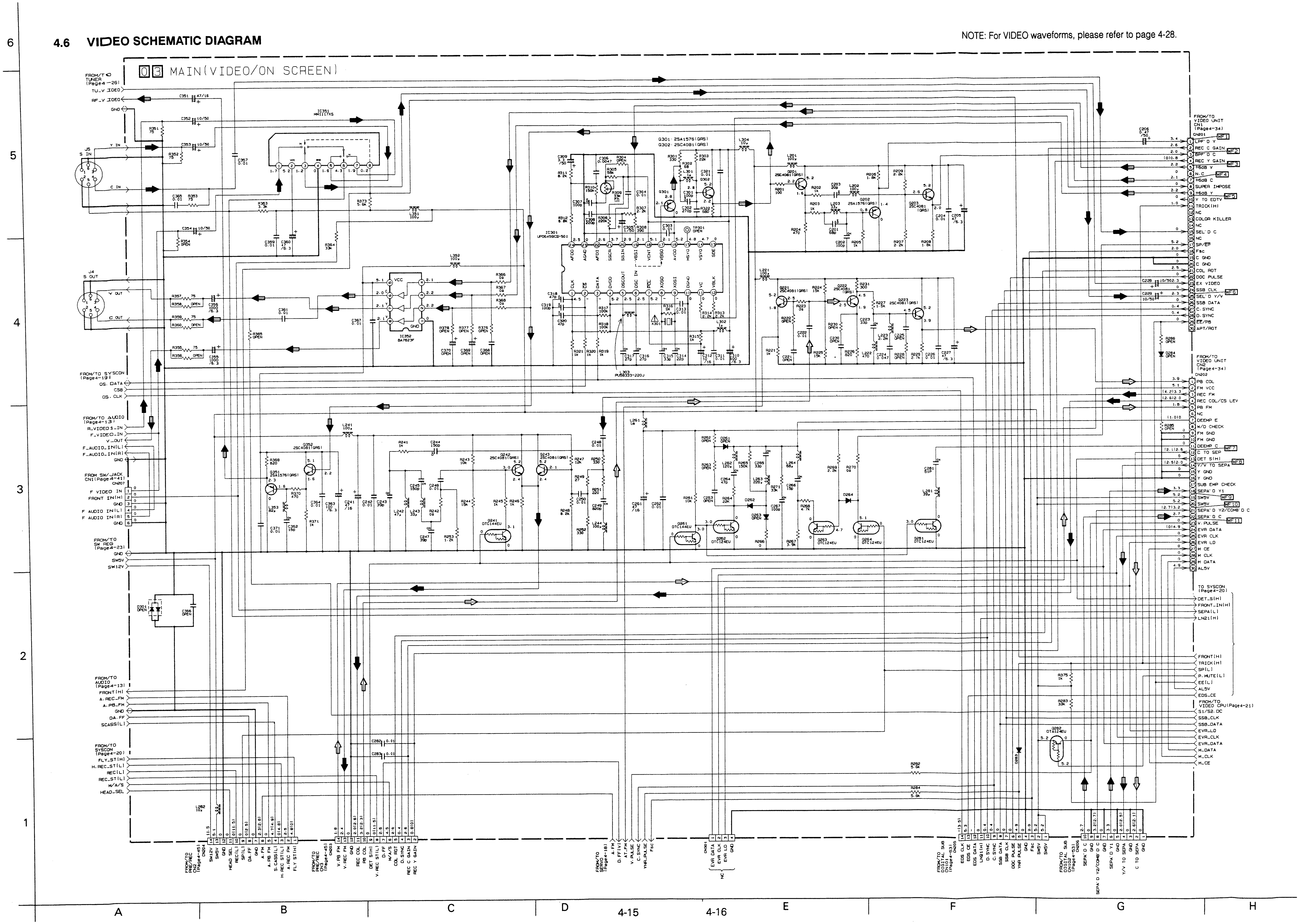
4.5 AUDIO SCHEMATIC DIAGRAM


FROM/TO TUNER (Page4-26)
RF_AUDIO
TU_AUDIO(R)
TU_AUDIO(L)
TO VIDEO
F_AUDIO_IN(R)
F_AUDIO_IN(L)
GND
CABLEBOX CTL
V IN
A IN(L)
A IN(R)
J2 OPEN
FROM SYSCON (Page 4-19)
REC_LEVEL_V
AUX(L)
FRONT(H)
J1
R V IN
R A IN(L)
R A IN(R)
J3
V OUT
A OUT(L)
A OUT(R)
FROM/TO VIDEO (Page4-15)
GND
V_OUT
R_VIDEO1_IN
F_VIDEO_IN
DA.FF
A.PB_FM
A.REC_FM
SCASS(L)
TO SYSCON (Page 4-19)
A.LEV(L)
A.LEV(R)
IC2 AN3969K
AUDIO LEVEL
IC3 BA6138
MUTE
IC1 JCP0056
INPUT SELECT (R-CH)
INPUT SELECT (L-CH)
NOISE REDUCTION (R-CH)
NOISE REDUCTION (L-CH)
NORMAL INPUT SELECT
OUTPUT SELECT
MIX
DET
EMP
N.DET
MODEM (R-CH)
MODEM (L-CH)
BPF
AGC
Z-TAN
D1 DAP202U
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
CN102
R/P
A.E
CN101
F.E
T101
T102
Q131 2SC4081(RS)
Q132 2SA933S(RS)
Q133 2SA933S(RS)
Q134 2SC4081(RS)
Q135 2SA933S(RS)
IC101 BA7795LS
ALC
Q101 DTC114EU
D102 DAP202U
D101 RD6.2ES -T1B2
Q51 2SD1450S.T
Q52 2SC3311A(RS)
B105 SHORT
FROM/TO SYSCON (Page 4-19)
SP(L)
A_CLK
A_DATA
ND(L)
A.MUTE(H)
N.REC(L)
REC_ST(L)
FE_ON(L)
N.EE(L)
SCASS(L)
FROM SERVO (Page4-18)
A.FF
FROM SW.REG (Page4-24)
SW5V
SW12V
GND
AL6V
AL12V
03 MAIN(AUDIO)
6
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE : For AUDIO waveforms. please refer to page4-28.

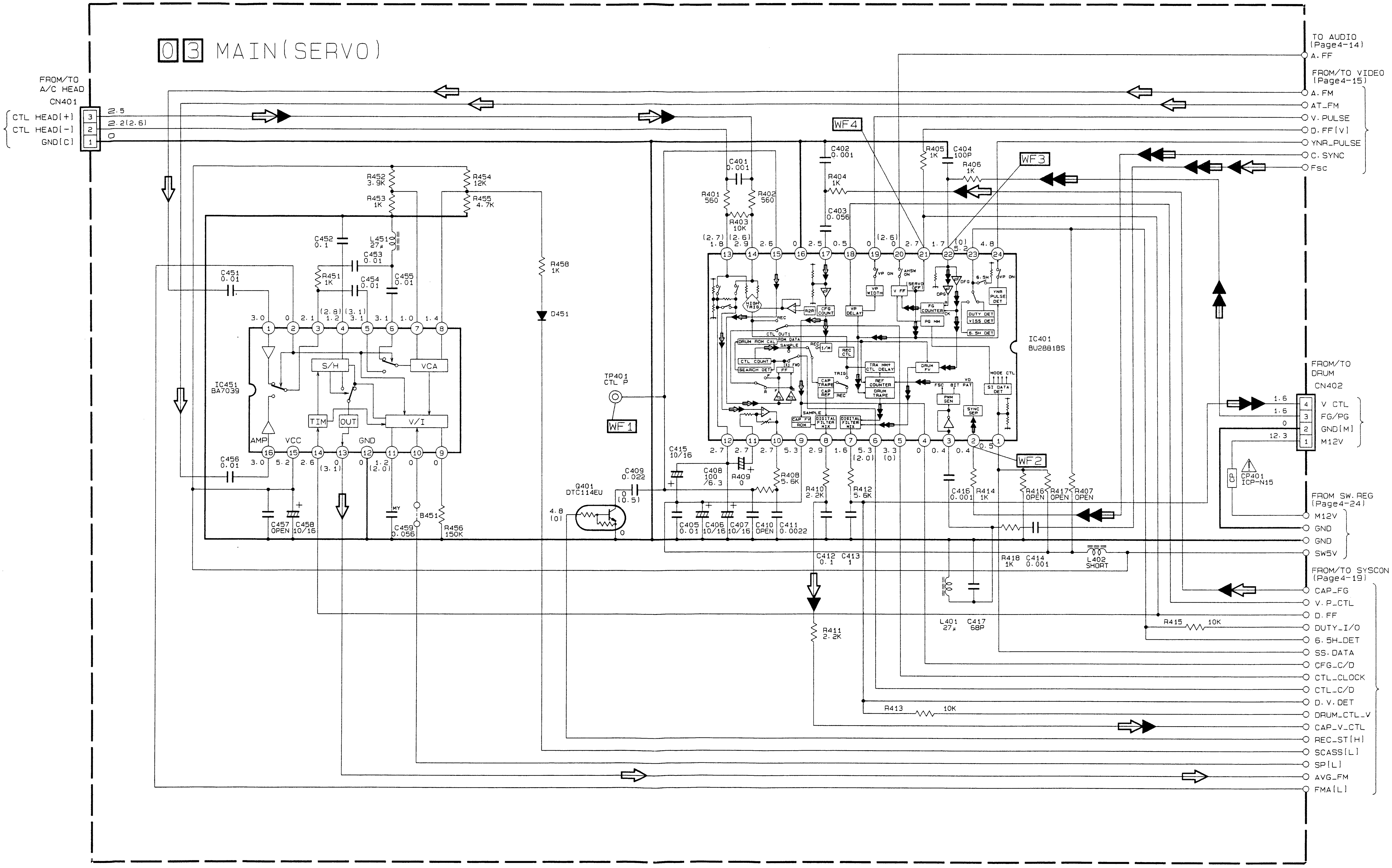
4.6 VIDEO SCHEMATIC DIAGRAM

NOTE: For VIDEO waveforms, please refer to page 4-28.



03 MAIN(VIDEO/ON SCREEN)
FROM/TO TUNER (Page4-26)
TU_V IDEO
RF_V IDEO
GND
J5 S IN
Y IN
C IN
J4 S OUT
Y OUT
C OUT
IC351 MM1117XS
IC352 BA7623F
IC301 UPD6459CS-501
Q301: 2SA1576(QRS)
Q302: 2SC4081(QRS)
FROM/TO SYSCON (Page4-19)
OS. DATA
CSB
OS. CLK
FROM/TO AUDIO (Page4-13)
R_VIDEO1_IN
F_VIDEO_IN
V_OUT
F_AUDIO_IN(L)
F_AUDIO_IN(R)
FROM SW/JACK CN1(Page4-41) CN207
F VIDEO IN
FRONT IN(H)
F AUDIO IN(L)
F AUDIO IN(R)
FROM/TO SW REG (Page4-23)
SW5V
SW12V
D301 OPEN
C356 OPEN
FROM/TO AUDIO (Page4-13)
FRONT(H)
A. REC_FM
A. PB_FM
DA. FF
SCASS(L)
FROM/TO SYSCON (Page4-20)
FLY_ST(H)
H. REC_ST(L)
REC(L)
REC_ST(L)
M/A/S
HEAD_SEL
FROM/TO VIDEO UNIT CN1 (Page4-34) CN201
LPF'D Y
REC C GAIN
BPF'D C
REC Y GAIN
+6dB V
N.C
+6dB C
SUPER IMPOSE
+6dB Y
Y TO EDTV
TRICK(H)
NC
COLOR KILLER
NC
SEL'D C
NC
SP/EP
Fsc
C GND
C GND
COL ROT
DOC PULSE
EX VIDEO
SSB CLK
SEL'D Y/V
SSB DATA
C. SYNC
D. SYNC
EE/PB
APT/ROT
FROM/TO VIDEO UNIT CN2 (Page4-34) CN202
PB COL
FM VCC
REC FM
REC COL/CS LEV
PB FM
NC
DEEMP E
W/D CHECK
FM GND
FM GND
DEEMP C
C TO SEP
DET S(H)
Y/V TO SEPA
Y GND
Y GND
SUB EMP CHECK
SEPA'D Y1
SW5V
SW5V
SEPA'D Y2/COMB'D C
SEPA'D C
V. PULSE
EVR DATA
EVR CLK
EVR LD
M CE
M CLK
M DATA
AL5V
TO SYSCON (Page4-20)
DET_S(H)
FRONT_IN(H)
SEPA(L)
LN21(H)
FRONT(H)
TRICK(H)
SP(L)
P. MUTE(L)
EE(L)
AL5V
EDS_CE
FROM/TO VIDEO CPU(Page4-21)
S1/S2. DC
SSB_CLK
SSB_DATA
EVR_LD
EVR_DATA
EVR_CLK
M_DATA
M_CLK
M_CE
FROM/TO PRE/REC CN2 (Page4-45) CN204
SW12V
SW5V
GND
HEAD SEL
REC(L)
SP(L)
DA.FF
GND
A.FM
S.CASS(L)
H.REC ST(L)
A.REC FM
FLY ST(H)
FROM/TO PRE/REC CN3 (Page4-45) CN203
V.PB FM
V.REC FM
GND
REC COL
PB COL
DET S(H)
V.REC ST(L)
D.FF
M/A/S
COL ROT
D.SYNC
REC C GAIN
REC Y GAIN
FROM/TO SERVO (Page4-18)
A.FM
D.FF(V)
AT.FM
V.PULSE
C.SYNC
YNR PULSE
Fsc
CN301
EVR DATA
EVR CLK
EVR LD
GND
NC
FROM/TO DIGITAL SUB CN101 (Page4-31) CN205
EDS CLK
EDS CE
EDS DATA
LN21(H)
D.SYNC
C.SYNC
SSB CLK
SSB PULSE
DOC PULSE
YNR PULSE
GND
Fsc
SW5V
SW5V
FROM/TO DIGITAL SUB CN102 (Page4-31) CN206
SEPA'D C
SEPA'D Y2/COMB'D C
GND
SEPA'D Y1
GND
Y/V TO SEPA
GND
C TO SEPA
GND
A
B
C
D
E
F
G
H
1
2
3
4
5
6

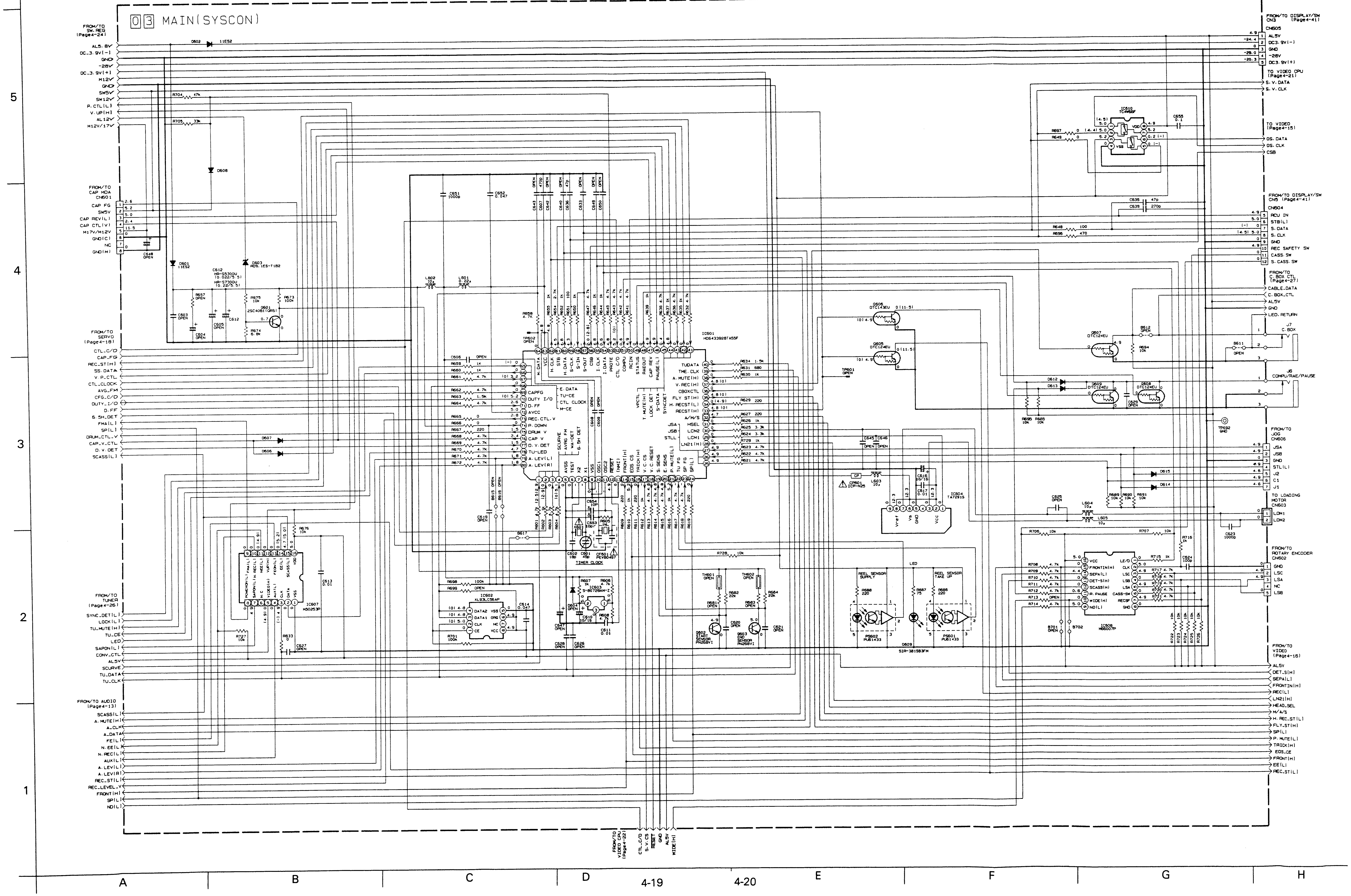
4.7 SERVO SCHEMATIC DIAGRAM



03 MAIN(SERVO)
FROM/TO A/C HEAD
CN401
CTL HEAD(+)
CTL HEAD(-)
GND(C)
TO AUDIO (Page4-14)
A.FF
FROM/TO VIDEO (Page4-15)
A.FM
AT_FM
V.PULSE
D.FF(V)
YNR_PULSE
C.SYNC
Fsc
FROM/TO DRUM
CN402
V CTL
FG/PG
GND(M)
M12V
CP401 ICP-N15
FROM SW.REG (Page4-24)
M12V
GND
GND
SW5V
FROM/TO SYSCON (Page4-19)
CAP_FG
V.P_CTL
D.FF
DUTY_I/O
6.5H_DET
SS.DATA
CFG_C/D
CTL_CLOCK
CTL_C/D
D.V.DET
DRUM_CTL_V
CAP_V_CTL
REC_ST(H)
SCASS(L)
SP(L)
AVG_FM
FMA(L)
IC451 BA7039
S/H
VCA
TIM
OUT
V/I
AMP
VCC
GND
IC401 BU2881BS
R452 3.9K
R453 1K
R454 12K
R455 4.7K
R451 1K
R456 150K
R458 1K
D451
L451 27μ
C451 0.01
C452 0.1
C453 0.01
C454 0.01
C455 0.01
C456 0.01
C457 OPEN
C458 10/16
C459 0.056
B451
TP401 CTL P
WF1
WF2
WF3
WF4
Q401 DTC114EU
C401 0.001
C402 0.001
C403 0.056
C404 100P
C405 0.01
C406 10/16
C407 10/16
C408 100 /6.3
C409 0.022
C410 OPEN
C411 0.0022
C412 0.1
C413 1
C414 0.001
C415 10/16
C416 0.001
C417 68P
R401 560
R402 560
R403 10K
R404 1K
R405 1K
R406 1K
R407 OPEN
R408 5.6K
R409 0
R410 2.2K
R411 2.2K
R412 5.6K
R413 10K
R414 1K
R415 10K
R416 OPEN
R417 OPEN
R418 1K
L401 27μ
L402 SHORT

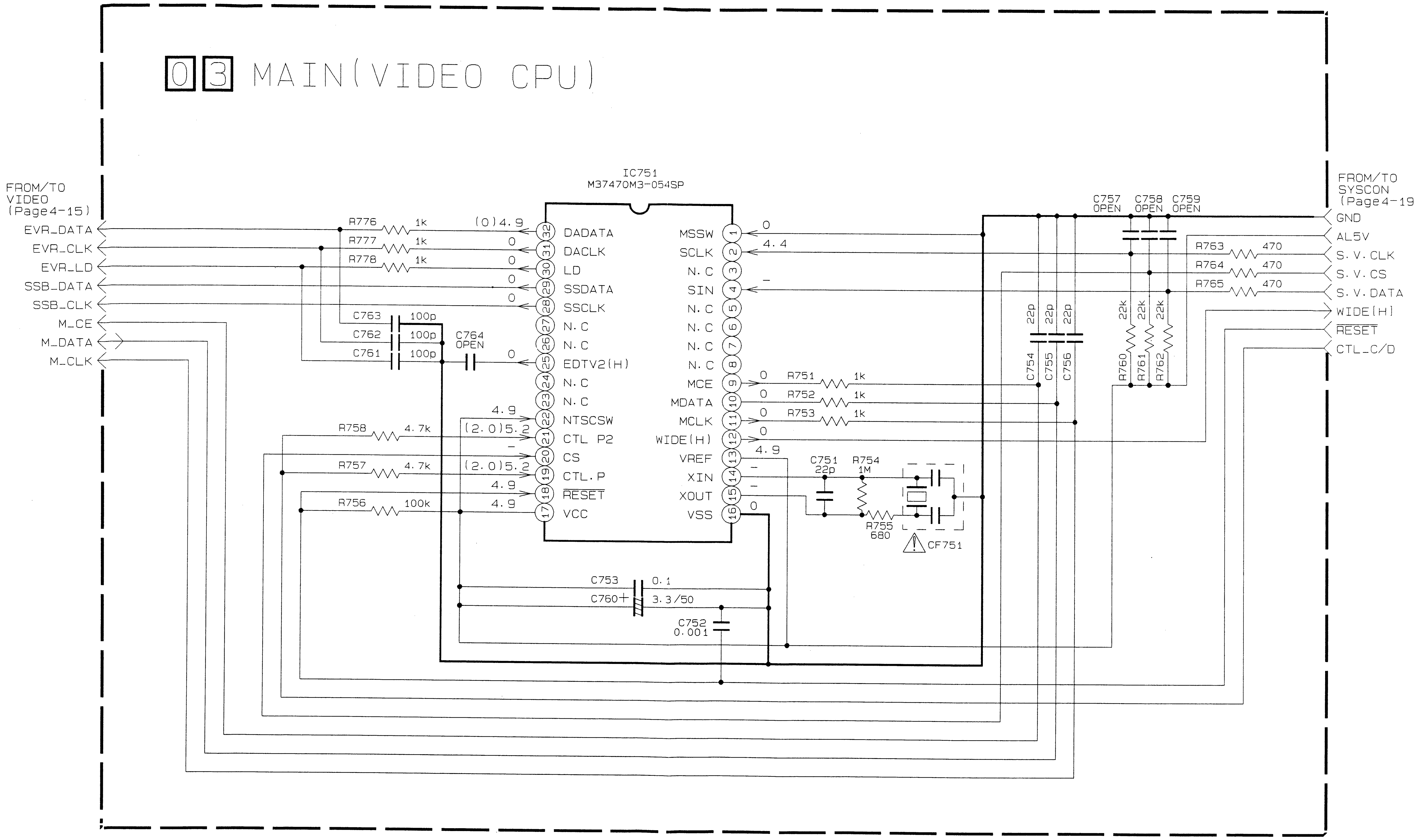
NOTE : For SERVO waveforms, please refer to page4-28.

4.8 SYSTEM CONTROL SCHEMATIC DIAGRAM

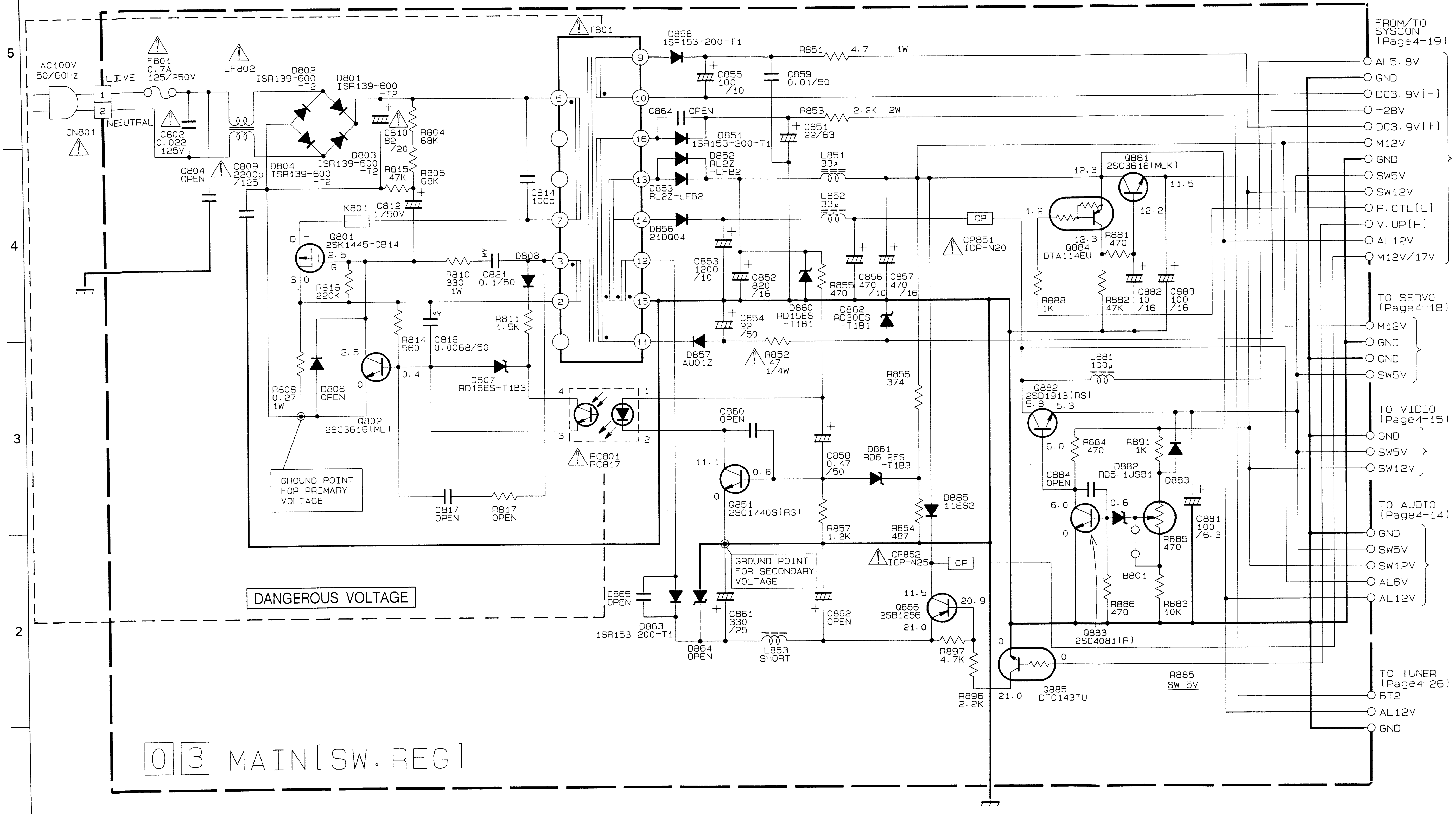


03 MAIN(SYSCON)
FROM/TO SW. REG (Page4-24)
AL5.8V
DC.-3.9V(-)
GND
-28V
DC.-3.9V(+)
M12V
GND
SW5V
SW12V
P.CTL(L)
V.UP(H)
AL12V
M12V/17V
FROM/TO CAP MDA CN501
CAP FG
SW5V
CAP REV(L)
CAP CTL(V)
M17V/M12V
GND(C)
NC
GND(M)
FROM/TO SERVO (Page4-18)
CTL.C/D
CAP.FG
REC.ST(H)
SS.DATA
V.P.CTL
CTL.CLOCK
AVG.FM
CFG.C/D
DUTY.I/O
D.FF
G.SW.DET
FMA(L)
SP(L)
DRUM.CTL.V
CAP.V.CTL
D.V.DET
SCASS(L)
FROM/TO TUNER (Page4-26)
SYNC.DET(L)
LOCK(L)
TU.MUTE(H)
TU.CE
LED
SAPON(L)
CONV.CTL
AL5V
SCURVE
TU.DATA
TU.CLK
FROM/TO AUDIO (Page4-13)
SCASS(L)
A.MUTE(H)
A.CLK
A.DATA
FE(L)
N.EE(L)
N.REC(L)
AUX(L)
A.LEV(L)
A.LEV(R)
REC.ST(L)
REC.LEVEL.V
FRONT(H)
SP(L)
ND(L)
IC601 HD6433928TA55F
IC602 XL93LC56AP
IC603 S-8072BAN-Z
IC607 M50253P
IC604 TA7291S
IC606 M66007P
IC610 TC4W66F
TIMER CLOCK
REEL SENSOR SUPPLY
REEL SENSOR TAKE UP
PS602 PU61433
PS601 PU61433
Q609 SIR-381583FM
Q602 START SENSOR PN268V1
Q603 END SENSOR PN268V1
FROM/TO DISPLAY/SW CN3 (Page4-41)
CN605
TO VIDEO CPU (Page4-21)
S.V.DATA
S.V.CLK
TO VIDEO (Page4-15)
OS.DATA
OS.CLK
CSB
FROM/TO DISPLAY/SW CN5 (Page4-41)
CN604
RCU IN
STB(L)
S.DATA
S.CLK
GND
REC SAFETY SW
CASS.SW
S.CASS.SW
FROM/TO C.BOX CTL (Page4-27)
CABLE.DATA
C.BOX.CTL
AL5V
GND
LED.RETURN
J7 C.BOX
J6 COMPU/RAE/PAUSE
FROM/TO JOG CN606
JSA
JSB
GND
STL(L)
J2
C1
J1
TO LOADING MOTOR CN603
LDM1
LDM2
FROM/TO ROTARY ENCODER CN602
GND
LSC
LSA
NC
LSB
FROM/TO VIDEO (Page4-16)
AL5V
DET.S(H)
SEPA(L)
FRONT(N)(H)
REC(L)
LN21(H)
HEAD.SEL
M/A/S
H.REC.ST(L)
FLY.ST(H)
SP(L)
P.MUTE(L)
EDS.CE
TRICK(H)
FRONT(H)
EE(L)
REC.ST(L)
FROM/TO VIDEO CPU (Page4-22)
CTL.C/D
S.V.CS
RESET
GND
AL5V
WIDE(H)
A
B
C
D
E
F
G
H
1
2
3
4
5
6

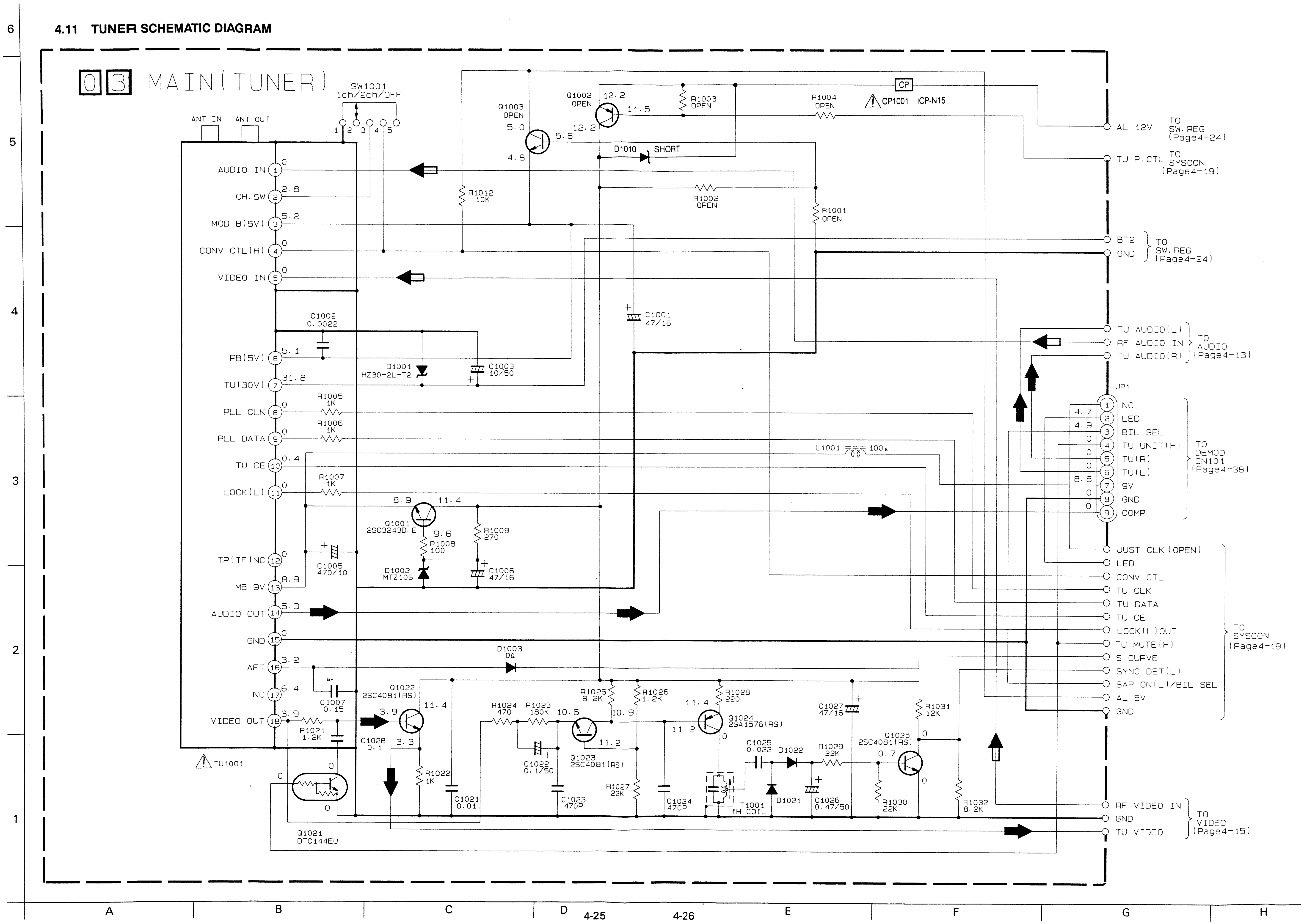
4.9 VIDEO CPU SCHEMATIC DIAGRAM


03 MAIN(VIDEO CPU)
IC751
M37470M3-054SP
FROM/TO VIDEO (Page4-15)
EVR_DATA
EVR_CLK
EVR_LD
SSB_DATA
SSB_CLK
M_CE
M_DATA
M_CLK
FROM/TO SYSCON (Page4-19)
GND
AL5V
S.V.CLK
S.V.CS
S.V.DATA
WIDE(H)
RESET
CTL_C/D
32 DADATA
31 DACLK
30 LD
29 SSDATA
28 SSCLK
27 N.C
26 N.C
25 EDTV2(H)
24 N.C
23 N.C
22 NTSCSW
21 CTL P2
20 CS
19 CTL.P
18 RESET
17 VCC
1 MSSW
2 SCLK
3 N.C
4 SIN
5 N.C
6 N.C
7 N.C
8 N.C
9 MCE
10 MDATA
11 MCLK
12 WIDE(H)
13 VREF
14 XIN
15 XOUT
16 VSS
R776 1k
R777 1k
R778 1k
(0)4.9
0
C763 100p
C762 100p
C761 100p
C764 OPEN
R758 4.7k
R757 4.7k
R756 100k
4.9
(2.0)5.2
-
R751 1k
R752 1k
R753 1k
4.4
C751 22p
R754 1M
R755 680
CF751
C753 0.1
C760 3.3/50
C752 0.001
C754 22p
C755 22p
C756 22p
C757 OPEN
C758 OPEN
C759 OPEN
R760 22k
R761 22k
R762 22k
R763 470
R764 470
R765 470

4.10 SWITCHING REGULATOR SCHEMATIC DIAGRAM

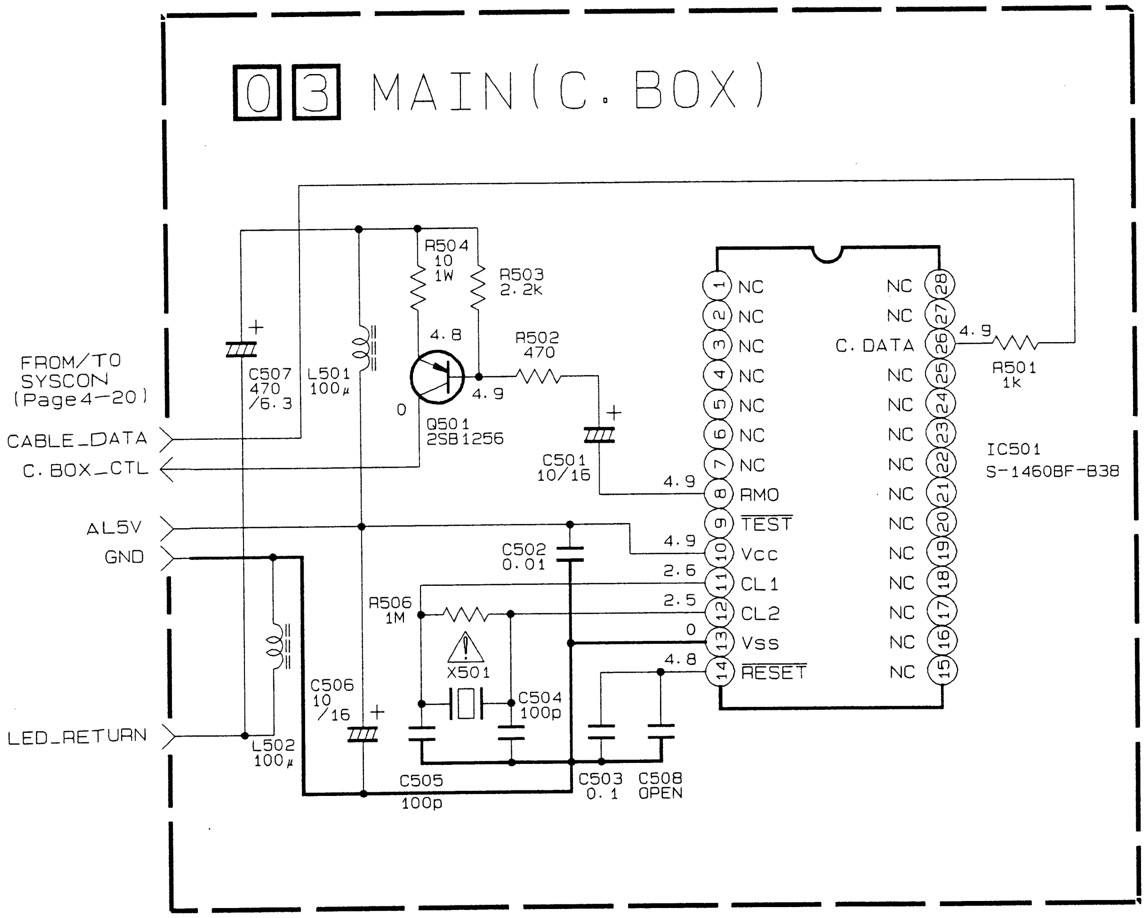

AC100V
50/60Hz
CN801
LIVE
NEUTRAL
F801
0.7A
125/250V
LF802
C802
0.022
125V
C804
OPEN
C809
2200p
/125
D802
ISR139-600
-T2
D801
ISR139-600
-T2
D803
ISR139-600
-T2
D804
ISR139-600
-T2
C810
82
/20
R804
68K
R815
47K
R805
68K
K801
C812
1/50V
C814
100p
T801
Q801
2SK1445-CB14
R816
220K
R810
330
1W
C821
0.1/50
D808
R811
1.5K
R814
560
C816
0.0068/50
D807
RD15ES-T1B3
R808
0.27
1W
D806
OPEN
Q802
2SC3616(ML)
2.5
0.4
GROUND POINT
FOR PRIMARY
VOLTAGE
C817
OPEN
R817
OPEN
PC801
PC817
DANGEROUS VOLTAGE
D858
1SR153-200-T1
C855
100
/10
C859
0.01/50
R851
4.7
1W
C864
OPEN
D851
1SR153-200-T1
R853
2.2K
2W
C851
22/63
D852
RL2Z
-LFB2
D853
RL2Z-LFB2
L851
33μ
L852
33μ
D856
21DQ04
C853
1200
/10
C852
820
/16
D860
RD15ES
-T1B1
R855
470
C856
470
/10
C857
470
/16
D862
RD30ES
-T1B1
C854
22
/50
R852
47
1/4W
D857
AU01Z
CP
CP851
ICP-N20
R856
374
C860
OPEN
Q851
2SC1740S(RS)
11.1
0.6
C858
0.47
/50
D861
RD6.2ES
-T1B3
R857
1.2K
R854
487
D885
11ES2
GROUND POINT
FOR SECONDARY
VOLTAGE
CP852
ICP-N25
C865
OPEN
D863
1SR153-200-T1
C861
330
/25
D864
OPEN
L853
SHORT
C862
OPEN
Q886
2SB1256
11.5
20.9
21.0
R897
4.7K
R896
2.2K
Q885
DTC143TU
R885
SW 5V
Q881
2SC3616(MLK)
12.3
11.5
12.2
1.2
Q884
DTA114EU
R881
470
R888
1K
R882
47K
C882
10
/16
C883
100
/16
L881
100μ
Q882
2SD1913(RS)
5.8
5.3
6.0
R884
470
R891
1K
D882
RD5.1JSB1
D883
C884
OPEN
0.6
C881
100
/6.3
R885
470
B801
R886
470
R883
10K
Q883
2SC4081(R)
FROM/TO
SYSCON
(Page4-19)
AL5.8V
GND
DC3.9V(-)
-28V
DC3.9V(+)
M12V
GND
SW5V
SW12V
P.CTL(L)
V.UP(H)
AL12V
M12V/17V
TO SERVO
(Page4-18)
M12V
GND
GND
SW5V
TO VIDEO
(Page4-15)
GND
SW5V
SW12V
TO AUDIO
(Page4-14)
GND
SW5V
SW12V
AL6V
AL12V
TO TUNER
(Page4-26)
BT2
AL12V
GND
03 MAIN(SW.REG)
A
B
C
D
E
F
G
H
1
2
3
4
5
6

4.11 TUNER SCHEMATIC DIAGRAM



03 MAIN(TUNER)
SW1001
1ch/2ch/OFF
ANT IN
ANT OUT
AUDIO IN
CH. SW
MOD B(5V)
CONV CTL(H)
VIDEO IN
PB(5V)
TU(30V)
PLL CLK
PLL DATA
TU CE
LOCK(L)
TP(IF)NC
MB 9V
AUDIO OUT
GND
AFT
NC
VIDEO OUT
TU1001
Q1003 OPEN
Q1002 OPEN
R1003 OPEN
R1004 OPEN
CP1001 ICP-N15
D1010 SHORT
R1012 10K
R1002 OPEN
R1001 OPEN
C1001 47/16
C1002 0.0022
D1001 HZ30-2L-T2
C1003 10/50
R1005 1K
R1006 1K
R1007 1K
L1001 100µ
Q1001 2SC3243D·E
R1008 100
R1009 270
D1002 MTZ10B
C1005 470/10
C1006 47/16
D1003 0Ω
C1007 0.15
R1021 1.2K
Q1021 DTC144EU
Q1022 2SC4081(RS)
C1028 0.1
R1022 1K
C1021 0.01
R1024 470
R1023 180K
C1022 0.1/50
C1023 470P
Q1023 2SC4081(RS)
R1025 8.2K
R1026 1.2K
R1027 22K
C1024 470P
R1028 220
Q1024 2SA1576(RS)
T1001 fH COIL
C1025 0.022
D1022
D1021
C1026 0.47/50
C1027 47/16
R1029 22K
R1030 22K
Q1025 2SC4081(RS)
R1031 12K
R1032 8.2K
AL 12V
TO SW. REG (Page4-24)
TU P. CTL
TO SYSCON (Page4-19)
BT2
GND
TO SW. REG (Page4-24)
TU AUDIO(L)
RF AUDIO IN
TU AUDIO(R)
TO AUDIO (Page4-13)
JP1
NC
LED
BIL SEL
TU UNIT(H)
TU(R)
TU(L)
9V
GND
COMP
TO DEMOD CN101 (Page4-38)
JUST CLK (OPEN)
LED
CONV CTL
TU CLK
TU DATA
TU CE
LOCK(L)OUT
TU MUTE(H)
S CURVE
SYNC DET(L)
SAP ON(L)/BIL SEL
AL 5V
GND
TO SYSCON (Page4-19)
RF VIDEO IN
GND
TU VIDEO
TO VIDEO (Page4-15)
A
B
C
D
E
F
G
H
1
2
3
4
5
6

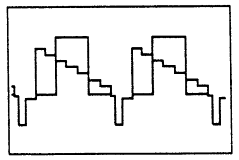
4.12 CABLE BOX SCHEMATIC DIAGRAM


03 MAIN(C.BOX)
FROM/TO SYSCON (Page4-20)
CABLE_DATA
C.BOX_CTL
AL5V
GND
LED_RETURN
C507 470 /6.3
L501 100µ
L502 100µ
R504 10 1W
R503 2.2k
R502 470
R506 1M
R501 1k
Q501 2SB1256
C501 10/16
C502 0.01
C506 10 /16
C505 100p
C504 100p
C503 0.1
C508 OPEN
X501
IC501 S-1460BF-B38
NC
C.DATA
RMO
TEST
Vcc
CL1
CL2
Vss
RESET
4.8
4.9
2.6
2.5
0

WAVEFORMS

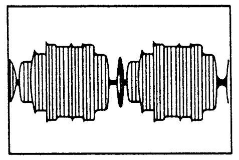
— VIDEO —

WF1 CN201-1 LPF.D Y



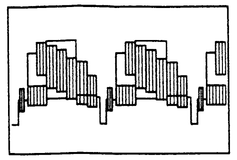
REC/PB 1.0 Vp-p
20 mV/20 µsec/DIV

WF2 CN201-3 BPF.D C



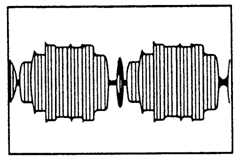
REC/PB 0.6 Vp-p
20 mV/10 µsec/DIV

WF3 CN201-5 +6 dB V



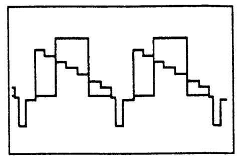
REC/PB 2.3 Vp-p
50 mV/10 µsec/DIV

WF4 CN201-7 +6 dB C



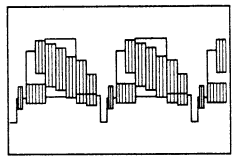
REC/PB 1.2 Vp-p
50 mV/10 µsec/DIV

WF5 CN201-9 +6 dB Y



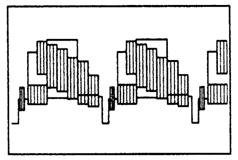
REC/PB 2.1 Vp-p
50 mV/10 µsec/DIV

WF6 CN201-25 SEL.D Y/V



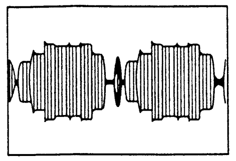
REC/PB 1.0 Vp-p
20 mV/20 µsec/DIV

WF7 CN202-12 C TO SEP



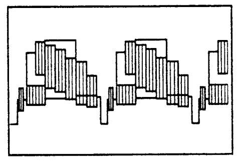
REC 0.8 Vp-p
20 mV/20 µsec/DIV

WF7 CN202-12 C TO SEP



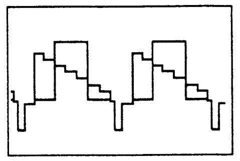
PB 0.7 Vp-p
20 mV/20 µsec/DIV

WF8 CN202-14 Y/V TO SEP



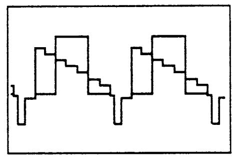
REC 1.0 Vp-p
20 mV/20 µsec/DIV

WF8 CN202-14 Y/V TO SEP



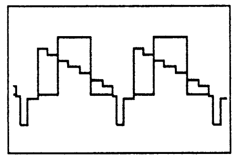
PB 1.1 Vp-p
20 mV/20 µsec/DIV

WF9 CN202-18 SEPA'D Y1



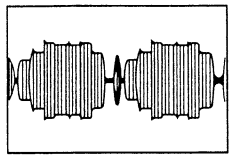
REC/PB 1.0 Vp-p
20 mV/20 µsec/DIV

WF10 CN202-21 SEPA.D Y2/COMB.D C



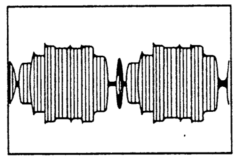
REC 1.0 Vp-p
20 mV/20 µsec/DIV

WF10 CN202-21 SEPA.D Y2/COMB.D C



PB 0.6 Vp-p
20 mV/20 µsec/DIV

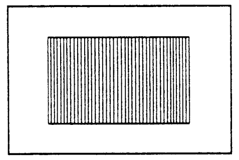
WF11 CN202-22 SEPA.D C



REC/PB 0.6 Vp-p
20 mV/20 µsec/DIV

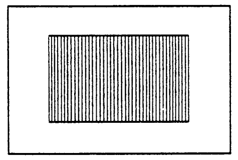
— AUDIO —

WF1 CN102-1



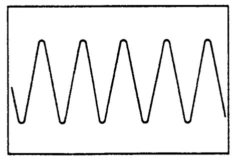
REC 50.0 Vp-p
1.0 V/0.2 msec/DIV

WF2 CN102-4



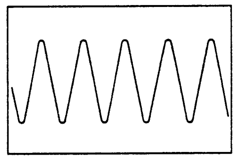
REC 40.0 Vp-p
1.0 V/0.2 msec/DIV

WF3 IC101-12



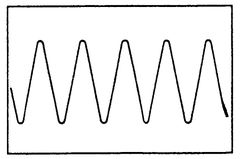
PB 0.1 Vp-p
5 mV/0.5 msec/DIV

WF4 IC101-16



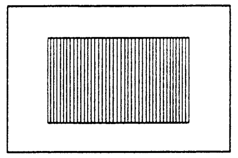
REC 0.25 Vp-p
10 mV/0.5 msec/DIV

WF5 IC101-22



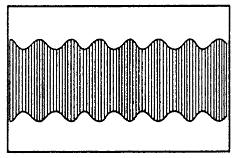
REC/PB 2.0 Vp-p
50 mV/0.5 msec/DIV

WF6 IC1-13



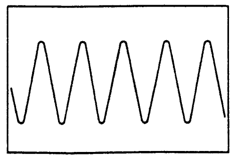
REC 0.6 Vp-p
20 mV/10 msec/DIV

WF7 IC1-20



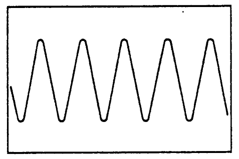
PB 0.35 Vp-p
50 mV/1 msec/DIV

WF8 IC1-45



REC 1.0 Vp-p/PB 1.0 Vp-p
20 mV/0.5 msec/DIV

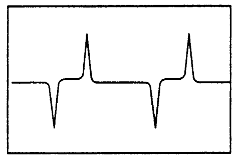
WF9 IC1-43



REC/PB 2.3 Vp-p
50 mV/0.5 msec/DIV

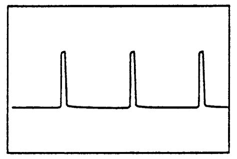
— SERVO —

WF1 TP401 CTL. PULSE



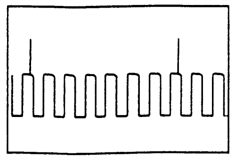
PB 2.5 Vp-p
0.1 V/5 msec/DIV

WF2 IC401-2 C. SYNC



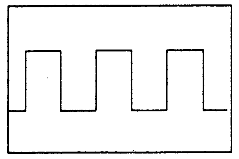
REC/PB 5.0 Vp-p
0.2 V/20 µsec/DIV

WF3 IC401-22 FG/PG



REC/PB 4.0 Vp-p
0.1V/5 msec/DIV

WF4 IC401-21 D. FF

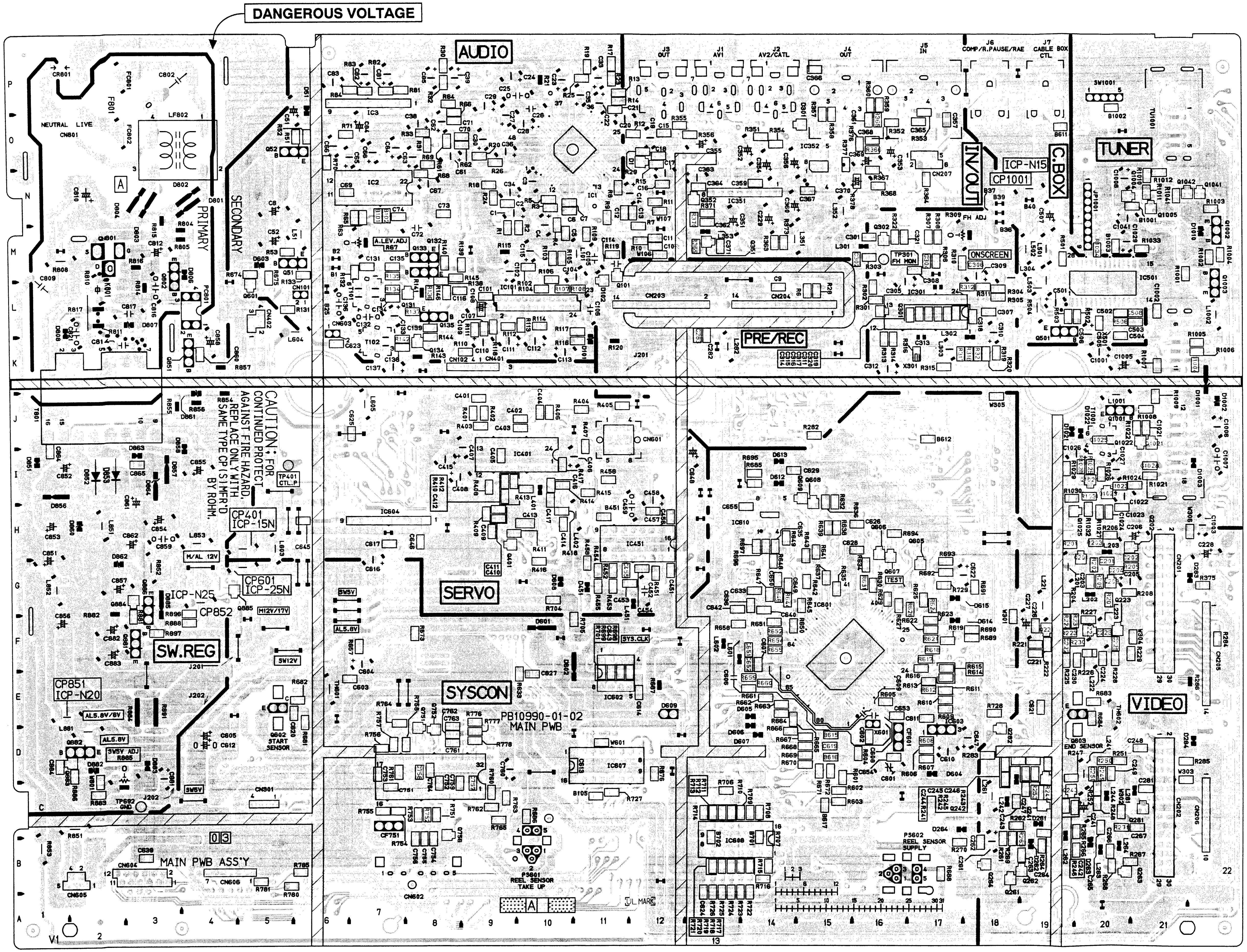


REC/PB 5.0 Vp-p
0.1 V/5 msec/DIV

COMPONENT PARTS LOCATION GUIDE

REF.NO.	LOCATION		
CAPACITOR			
C1	A	D	10N
C2	B	C	9N
C3	A	D	10N
C4	A	D	10N
C5	B	C	10M
C6	B	C	10N
C7	B	C	10N
C8	A	D	5N
C9	B	C	14L
C10	B	C	12M
C11	B	C	12M
C12	B	C	11N
C13	B	C	12N
C14	A	D	12N
C15	B	C	12O
C16	B	C	12N
C17	A	D	12N
C18	B	C	12O
C19	A	D	12O
C20	A	D	11O
C21	B	C	11P
C22	A	D	11P
C23	A	D	10P
C24	A	D	10P
C25	A	D	10P
C26	A	D	10P
C27	A	D	9O
C28	A	D	10O
C29	A	D	9P
C30	A	D	9O
C33	A	D	11P
C34	A	D	9N
C35	A	D	11P
C36	A	D	9O
C38	A	D	8O
C39	A	D	8P
C51	A	D	6O
C52	A	D	5M
C61	A	D	8O
C62	A	D	8O
C63	A	D	8O
C64	A	D	7O
C65	A	D	7O
C66	A	D	6O
C67	A	D	8N
C68	A	D	7O
C69	B	C	6N
C70	B	C	9O
C71	B	C	8O
C72	A	D	8M
C73	B	C	8N
C74	B	C	7N
C81	A	D	7P
C82	A	D	7P
C83	A	D	6P
C84	A	D	7O
C85	A	D	8P
C101	B	C	9L
C102	A	D	9M
C104	A	D	10M
C105	A	D	11M
C106	A	D	11L
C107	A	D	9L
C108	B	C	9L
C109	B	C	9L
C110	A	D	9K
C111	A	D	9K
C112	A	D	10K
C113	A	D	10K
C114	A	D	11M
C115	A	D	10M
C116	B	C	8L
C131	B	C	7M
C132	A	D	7L
C133	A	D	7L
C134	B	C	7L
C135	B	C	7M
C136	A	D	6L
C137	A	D	7K
C138	B	C	7K
C139	B	C	8L
C201	B	C	20G
C202	B	C	21H
C203	B	C	20G
C204	B	C	20G
C205	A	D	20G
C206	A	D	21H
C221	B	C	19F
C222	B	C	19F
C223	B	C	20F
C224	B	C	20F
C225	B	C	20F
C226	B	C	19F
C227	A	D	19F
C228	A	D	22H
C229	A	D	14M
C230	B	C	20F
C241	A	D	20C
C242	B	C	20C
C243	B	C	18C
C244	B	C	18D
C245	B	C	18D
C246	B	C	19D
C247	B	C	19C
C248	B	C	21D
C249	B	C	20D
C250	B	C	20D
C261	A	D	18B
C262	B	C	18B
C263	B	C	19B
C264	B	C	19C
C265	B	C	20C
C266	B	C	20B
C267	B	C	21C
C281	B	C	21C
C282	B	C	13L
C283	B	C	13L
C301	B	C	16M
C302	B	C	16M
C303	A	D	17L
C304	B	C	17M
C305	A	D	17L
C306	B	C	18M
C307	B	C	18L
C308	B	C	17M
C309	A	D	18M
C310	A	D	18K
C311	B	C	17L
C312	A	D	16K
C313	A	D	17K
C314	B	C	17L
C315	B	C	17L
C316	B	C	17L
C317	B	C	17L
C318	B	C	18L
C319	B	C	18L
C320	B	C	17L
C321	B	C	16M
C351	A	D	13M
C352	A	D	14O
C353	A	D	16O
C354	A	D	14N
C355	A	D	13O
C356	A	D	14N
C357	B	C	17O
C359	B	C	14N
C360	A	D	14N
C361	B	C	16O
C362	B	C	13N
C363	A	D	13N
C364	B	C	13N
C365	B	C	17O
C366	B	C	15P
C367	B	C	15N
C368	B	C	16O
C369	A	D	16O
C370	A	D	15N
C371	B	C	13M
C401	B	C	9J
C402	B	C	10J
C403	B	C	10J
C404	B	C	10J
C405	B	C	9I
C406	A	D	11I
C407	A	D	9I
C408	A	D	8I
C409	B	C	9H
C410	B	C	9H
C411	B	C	9H
C412	B	C	9I
C413	B	C	10H
C414	B	C	10H
C415	A	D	8I
C416	B	C	10I
C417	B	C	10I
C451	B	C	12G
C452	A	D	12G
C453	B	C	12G
C454	B	C	12G
C455	B	C	11G
C456	B	C	12H
C457	B	C	12H
C458	A	D	12I
C459	A	D	12H
C501	A	D	19L
C502	B	C	20L
C503	B	C	21L
C504	B	C	20K
C505	B	C	20L
C506	A	D	20L
C507	A	D	19M
C508	B	C	21L
C601	A	D	16D
C602	B	C	16D
C603	B	C	7E
C604	A	D	7F
C605	A	D	4D
C606	A	D	13F
C607	B	C	14F
C608	A	D	14F
C609	A	D	14F
C610	A	D	17D
C611	B	C	17E
C612	A	D	4D
C613	B	C	11D
C614	B	C	12E
C616	A	D	7G
C617	B	C	7H
C619	B	C	15D
C620	B	C	6E
C621	B	C	19E
C622	A	D	17G
C623	B	C	6K
C624	B	C	13A
C625	B	C	7J
C626	B	C	16H
C627	B	C	10E
C628	B	C	16H
C629	B	C	14I
C633	B	C	14G
C635	B	C	14H
C636	B	C	14G
C639	B	C	3B
C640	B	C	14G
C642	B	C	13G
C643	B	C	11E
C645	B	C	6H
C646	B	C	8H
C647	A	D	18D
C648	A	D	13I
C649	B	C	14G
C650	B	C	14G
C651	B	C	14F
C652	B	C	14F
C653	B	C	16E
C654	B	C	16D
C655	B	C	14H
C751	B	C	7C
C752	B	C	8C
C753	B	C	7D
C754	B	C	8B
C755	B	C	8B
C756	B	C	8B
C757	B	C	9C
C758	B	C	8D
C759	B	C	8C
C760	A	D	9D
C761	B	C	8D
C762	B	C	8D
C763	B	C	8D
C764	B	C	8D
C802	A	D	4P
C809	A	D	1M
C810	A	D	2N
C812	A	D	3M
C814	A	D	3K
C816	A	D	3L
C817	A	D	2L
C821	A	D	2K
C851	A	D	1G
C852	A	D	2I
C853	A	D	1H
C854	A	D	3H
C855	A	D	4I
C856	A	D	1F
C857	A	D	3G
C858	A	D	4L
C859	A	D	3H
C860	B	C	4K
C861	A	D	3I
C862	A	D	3H
C864	B	C	1I
C865	B	C	3I
C881	A	D	3D
C882	A	D	2F
C883	A	D	2F
C884	B	C	1D
C1001	A	D	20K
C1002	B	C	21L
C1003	A	D	22H
C1004	B	C	22K
C1005	A	D	20K
C1006	A	D	22J
C1007	A	D	22I
C1008	A	D	20N
C1021	B	C	21J
C1022	A	D	20I
C1023	B	C	20H
C1024	B	C	20H
C1025	B	C	20J
C1026	A	D	20I
C1027	A	D	20I
C1028	B	C	21I
C1029	A	D	20M
C1041	A	D	20N
CONNECTOR			
CN101	A	D	6L
CN102	A	D	8K
CN201	A	D	21H
CN202	A	D	21D
CN203	A	D	13L
CN204	A	D	15L
CN205	A	D	22G
CN206	A	D	22C
CN207	A	D	17O
CN301	A	D	5C
CN401	A	D	9K
CN402	A	D	5L
CN601	A	D	11J
CN602	A	D	8B
CN603	A	D	6L
CN604	A	D	3B
CN605	A	D	2B
CN606	A	D	5B
CN801	A	D	2P
CIRCUIT PROTECTOR			
CP401	A	D	4H
CP601	A	D	4G
CP851	A	D	1E
CP852	A	D	4G
CP1001	A	D	19N
DIODE			
D1	B	C	12O
D51	A	D	6P
D101	A	D	11K
D102	B	C	11L
D261	A	D	19C
D262	A	D	19C
D263	A	D	20C
D264	A	D	18C
D283	A	D	22G
D284	A	D	22D
D301	B	C	15O
D451	A	D	11G
D601	A	D	10F
D602	A	D	11F
D603	A	D	5M
D604	A	D	17D
D605	A	D	14E
D606	A	D	14D
D607	A	D	14D
D608	A	D	10G
D609	A	D	12E
D612	A	D	14I
D613	A	D	14I
D614	A	D	17F
D615	A	D	17G
D801	A	D	4N
D802	A	D	3N
D803	A	D	3N
D804	A	D	3N
D806	A	D	4M
D807	A	D	3L
D808	A	D	2K
D851	A	D	1I
D852	A	D	2I
D853	A	D	2I
D856	A	D	2I
D857	A	D	3I
D858	A	D	4J
D860	A	D	2H
D861	A	D	4J
D862	A	D	3G
D863	A	D	3I
D864	A	D	3H
D882	A	D	2D
D883	A	D	3D
D885	A	D	3G
D1001	A	D	22K
D1002	A	D	22J
D1003	A	D	22I
D1010	A	D	22M
D1021	A	D	19J
D1022	A	D	20J
IC			
IC1	B	C	11O
IC2	A	D	8N
IC3	A	D	8P
IC101	A	D	9L
IC301	A	D	17L
IC351	A	D	14N
IC352	B	C	15O
IC401	A	D	10I
IC451	A	D	12H
IC501	B	C	20L
IC601	B	C	15F
IC602	A	D	11F
IC603	A	D	17D
IC604	A	D	8H
IC607	A	D	11D
IC608	A	D	14B
IC610	B	C	14H
IC751	A	D	9C
COIL			
L51	A	D	6M
L101	A	D	11M
L201	A	D	19G
L202	A	D	20G
L203	A	D	20H
L221	A	D	19F
L222	A	D	20F
L223	A	D	20F
L241	A	D	20C
L242	A	D	18C
L243	A	D	18C
L244	A	D	20C
L261	A	D	18C
L262	A	D	19B
L263	A	D	20B
L264	A	D	20B
L281	A	D	21C
L282	A	D	13K
L301	A	D	16M
L302	A	D	17K
L303	A	D	17K
L304	A	D	18M
L351	A	D	14M
L352	A	D	15N
L353	A	D	13M
L401	A	D	10I
L402	A	D	11H
L451	A	D	12G
L501	A	D	19M
L502	A	D	19M
L503	A	D	19L
L601	A	D	13F
L602	A	D	13F
L603	A	D	5H
L604	A	D	6L
L605	A	D	7J
L851	A	D	2H
L852	A	D	1G
L853	A	D	4H
L881	A	D	2D
L1001	A	D	20J
L1002	A	D	22L
TRANSISTOR			
Q51	A	D	6M
Q52	A	D	6O
Q101	B	C	11M
Q131	B	C	8L
Q132	A	D	8M
Q133	A	D	8M
Q134	B	C	8K
Q135	A	D	8L
Q201	B	C	20H
Q202	B	C	21H
Q203	B	C	20G
Q221	B	C	19F
Q222	B	C	20F
Q223	B	C	20F
Q241	B	C	19C
Q242	B	C	19D
Q243	B	C	19C
Q261	B	C	18B
Q262	B	C	19B
Q263	B	C	20B
Q264	B	C	18B
Q281	B	C	21C
Q282	B	C	18D
Q301	B	C	16L
Q302	B	C	16M
Q351	B	C	13M
Q352	B	C	13N
Q401	B	C	9H
Q501	A	D	19L
Q601	B	C	5L
Q602	A	D	5E
Q603	A	D	20E
Q605	B	C	17G
Q606	B	C	16H
Q607	B	C	16H
Q608	B	C	15I
Q609	B	C	15I
Q751	B	C	8D
Q752	B	C	8D
Q756	B	C	8C
Q801	A	D	2M
Q802	A	D	3M
Q851	A	D	4K
Q881	A	D	3F
Q882	A	D	2D
Q883	B	C	2D
Q884	B	C	3G
Q885	B	C	4G
Q886	A	D	3G
Q1001	A	D	20J
Q1002	A	D	22N
Q1003	A	D	22L
Q1004	B	C	20N
Q1005	B	C	21N
Q1021	B	C	21J
Q1022	B	C	21J
Q1023	B	C	20I
Q1024	B	C	20I
Q1025	B	C	20H
Q1041	B	C	22N
Q1042	B	C	22N
RESISTOR			
R1	B	C	9M
R2	B	C	10M
R3	B	C	10N
R4	B	C	10M
R5	B	C	10N
R6	B	C	15L
R7	B	C	12M
R8	B	C	11N
R9	B	C	11N
R10	B	C	12M
R11	B	C	12N
R12	B	C	12O
R13	B	C	11P
R14	B	C	11P
R15	B	C	12O
R17	B	C	11P
R18	B	C	9N
R19	B	C	11P
R20	B	C	9O
R21	A	D	10P
R23	B	C	11P
R24	B	C	9N
R25	B	C	11P
R26	B	C	9O
R28	B	C	15L
R29	B	C	12O
R30	B	C	8P
R31	B	C	8O
R32	B	C	8P
R33	B	C	8O
R51	B	C	6O
R52	B	C	6O
R53	B	C	5M
R61	B	C	8O
R62	B	C	9O
R63	B	C	7N
R64	B	C	8P
R65	B	C	7N
R66	B	C	8P
R67	A	D	7M
R68	B	C	8N
R69	B	C	8O
R70	B	C	6O
R71	B	C	6O
R81	B	C	7P
R82	B	C	7P
R83	B	C	7P
R84	B	C	7P
R102	B	C	10M
R103	B	C	10M
R104	B	C	10L
R105	B	C	10M
R106	B	C	10M
R107	B	C	10L
R108	B	C	11L
R109	B	C	11M
R110	B	C	9K
R111	B	C	9L
R112	B	C	9L
R113	B	C	10L
R114	B	C	10L
R115	A	D	9M
R116	B	C	11K
R117	B	C	11L
R118	B	C	9L
R119	B	C	11M
R120	A	D	11K
R131	B	C	5L
R132	B	C	7M
R133	B	C	6M
R134	B	C	7L
R135	B	C	7M
R136	B	C	8L
R137	B	C	8L
R138	B	C	8L
R139	B	C	9M
R140	B	C	8M
R141	A	D	8L
R142	B	C	7K
R143	A	D	8K
R144	B	C	8K
R145	B	C	8M
R146	B	C	8L
R201	B	C	19H
R202	B	C	20G
R203	B	C	20H
R204	B	C	19G
R205	B	C	21G
R206	B	C	20H
R207	B	C	20G
R208	B	C	20G
R209	B	C	20G
R221	B	C	19F
R222	B	C	19F
R223	B	C	19F
R224	B	C	19F
R225	B	C	19F
R226	B	C	20F
R227	B	C	20F
R228	B	C	20F
R229	B	C	21F
R230	B	C	20F
R231	B	C	19F
R241	B	C	18D
R242	B	C	19D
R243	B	C	19D
R244	B	C	19C
R245	B	C	19D
R246	B	C	19C
R247	B	C	19D
R248	B	C	20C
R249	B	C	20D
R250	B	C	20D
R251	B	C	20D
R252	B	C	20C
R253	B	C	19C
R261	B	C	18B
R262	B	C	18C
R263	B	C	19B
R264	B	C	19B
R265	B	C	20C
R266	B	C	20B
R267	B	C	21B
R268	B	C	20B
R269	B	C	18B
R270	B	C	17B
R271	B	C	20C
R282	B	C	15J
R283	B	C	18D
R284	B	C	22F
R285	B	C	21D
R286	A	D	22E
R301	B	C	16L
R302	B	C	16L
R303	B	C	16M
R304	B	C	18L
R305	B	C	18L
R306	B	C	17M
R307	B	C	17M
R308	B	C	17M
R309	A	D	17M
R310	B	C	17M
R311	B	C	18L
R312	B	C	18L
R313	B	C	16K
R314	B	C	16K
R315	B	C	17K
R316	B	C	17K
R317	B	C	17K
R318	B	C	18K
R319	B	C	18K
R320	B	C	18K
R321	B	C	18K
R322	B	C	16M
R351	B	C	14O
R352	B	C	16O
R353	B	C	17P
R354	B	C	14O
R355	B	C	12O
R356	B	C	13O
R357	B	C	15O
R358	B	C	15O
R359	B	C	16P
R360	B	C	16P
R363	B	C	14M
R364	B	C	17N
R365	B	C	16O
R366	B	C	16O
R367	B	C	16N
R368	B	C	16N
R369	B	C	13M
R370	B	C	13N
R371	B	C	13N
R373	B	C	14M
R375	B	C	22G
R376	B	C	16O
R377	B	C	15O
R378	B	C	16N
R401	B	C	9J
R402	B	C	9J
R403	B	C	9J
R404	B	C	11J
R405	B	C	11J
R406	B	C	10J
R407	B	C	11J
R408	B	C	9I
R409	B	C	9H
R410	B	C	9I
R411	B	C	9H
R412	B	C	9I
R413	B	C	10I
R414	B	C	10I
R415	B	C	11I
R416	B	C	10G
R417	B	C	10I
R418	B	C	10H
R451	B	C	12G
R452	B	C	11G
R453	B	C	11G
R454	B	C	11G
R455	B	C	11G
R456	B	C	11I
R458	B	C	11G
R501	B	C	19M
R502	B	C	20L
R503	B	C	19L
R504	A	D	19L
R506	B	C	20L
R601	B	C	15D
R602	B	C	15C
R603	B	C	15C
R604	B	C	16D
R605	B	C	16E
R606	B	C	17D
R607	B	C	17D
R608	B	C	17D
R609	B	C	17E
R610	B	C	17E
R611	B	C	17E
R612	B	C	17E
R613	B	C	17E
R614	B	C	17E
R615	B	C	17F
R616	B	C	17F
R617	B	C	17F
R618	B	C	17F
R619	B	C	17F
R621	B	C	17F
R622	B	C	17F
R623	B	C	17F
R624	B	C	17G
R625	B	C	17G
R626	B	C	17G
R627	B	C	16G
R629	B	C	16G
R630	B	C	16G
R631	B	C	16G
R632	B	C	15I
R633	B	C	10E
R634	B	C	16G
R635	B	C	15G
R636	B	C	15I
R637	B	C	15G
R638	B	C	15H
R639	B	C	15H
R641	B	C	15H
R642	B	C	15G
R643	B	C	15H
R644	B	C	14G
R645	B	C	15G
R646	B	C	14G
R647	B	C	14G
R648	B	C	14G
R649	B	C	14H
R650	B	C	14F
R651	B	C	14F
R652	B	C	14F
R654	B	C	14F
R655	B	C	14F
R657	B	C	7F
R658	B	C	13F
R659	B	C	14E
R660	B	C	14E
R661	B	C	14E
R662	B	C	14E
R663	B	C	14E
R664	B	C	14E
R665	B	C	14E
R666	B	C	14D
R667	B	C	15D
R668	B	C	15D
R669	B	C	15D
R670	B	C	15D
R671	B	C	15D
R672	B	C	15D
R673	B	C	8F
R674	B	C	5M
R675	B	C	5M
R676	B	C	12D
R681	B	C	6E
R682	B	C	6E
R683	B	C	20E
R684	B	C	20E
R685	B	C	14I
R686	B	C	10C
R687	A	D	12E
R688	B	C	17B
R689	B	C	18F
R690	B	C	18F
R691	B	C	18G
R692	B	C	17G
R693	B	C	17G
R694	B	C	16H
R695	B	C	14I
R696	B	C	14H
R697	B	C	14H
R698	B	C	12E
R699	B	C	11E
R701	B	C	11E
R704	B	C	10G
R705	B	C	11F
R706	B	C	13C
R707	B	C	14B
R708	B	C	14C
R709	B	C	14C
R710	B	C	14C
R711	B	C	13C
R712	B	C	13C
R713	B	C	13C
R714	B	C	13C
R715	B	C	14B
R716	B	C	14B
R717	B	C	14B
R718	B	C	14B
R719	B	C	13B
R720	B	C	13B
R721	B	C	13B
R722	B	C	14A
R723	B	C	14A
R724	B	C	13A
R725	B	C	13A
R726	B	C	13A
R727	B	C	11C
R728	B	C	18E
R729	B	C	17G
R751	B	C	8C
R752	B	C	8C
R753	B	C	8C
R754	B	C	7C
R755	B	C	7C
R756	B	C	7D
R757	B	C	7D
R758	B	C	8D
R760	B	C	9C
R761	B	C	7D
R762	B	C	9C
R763	B	C	9C
R764	B	C	7E
R765	B	C	9C
R776	B	C	9E
R777	B	C	9D
R778	B	C	9D
R780	B	C	5B
R781	B	C	5B
R785	B	C	6B
R804	A	D	3M
R805	A	D	3M
R808	A	D	1M
R810	A	D	2L
R811	A	D	2L
R814	A	D	3M
R815	A	D	3M
R816	A	D	3M
R817	A	D	2L
R851	A	D	1C
R852	A	D	3G
R853	A	D	1B
R854	A	D	4J
R855	A	D	3J
R856	A	D	4J
R857	A	D	4K
R881	B	C	3F
R882	A	D	2G
R883	B	C	2C
R884	A	D	3D
R885	A	D	2D
R886	B	C	2D
R888	B	C	4F
R891	A	D	3D
R896	B	C	4G
R897	B	C	3F
R1001	B	C	21M
R1002	B	C	22M
R1003	B	C	22N
R1004	B	C	22M
R1005	B	C	22K
R1006	B	C	22K
R1007	B	C	21K
R1008	B	C	21J
R1009	B	C	21J
R1010	B	C	21N
R1011	B	C	21N
R1012	B	C	21N
R1021	B	C	21I
R1022	B	C	21J
R1023	B	C	20I
R1024	B	C	21I
R1025	B	C	20I
R1026	B	C	20I
R1027	B	C	20H
R1028	B	C	20I
R1029	B	C	19I
R1030	B	C	19I
R1031	B	C	20I
R1032	B	C	20H
R1033	B	C	21M
R1034	B	C	20M
R1041	B	C	21N
TEST POINT			
TP301	A	D	16M
TP401	A	D	5I
TP692	A	D	3C
TU1001	A	D	21P
OTHERS			
CF601	A	D	16D
CF751	A	D	7C
CR801	A	D	2P
F801	A	D	2O
J1	A	D	13P
J2	A	D	14P
J3	A	D	12P
J4	A	D	15P
J5	A	D	17P
J6	A	D	18P
J7	A	D	19P
J201	A	D	12K
J202	A	D	4E
JP1001	A	D	20N
K801	A	D	2L
LF802	A	D	4O
PC801	A	D	4L
PS601	A	D	10B
PS602	A	D	16B
SW1001	A	D	20P
T101	A	D	7L
T102	A	D	7L
T801	A	D	1K
T1001	A	D	20J
TH601	A	D	6E
TH602	A	D	20E
X301	A	D	16K
X501	A	D	20L
X601	A	D	16E

4.13 MAIN AND A/C HEAD CIRCUIT BOARDS


DANGEROUS VOLTAGE
AUDIO
TUNER
IN/OUT
C.BOX
ICP-N15
CP1001
PRE/REC
ONSCREEN
PRIMARY
SECONDARY
CAUTION: FOR CONTINUED PROTECT AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE CP(S) MFR'D BY ROHM.
CP401
ICP-15N
CP601
ICP-25N
ICP-N25
CP852
SW.REG
CP851
ICP-N20
SERVO
SYSCON
VIDEO
PB10990-01-02
MAIN PWB
MAIN PWB ASS'Y
TEST
SYS.CLK
START SENSOR
END SENSOR
REEL SENSOR TAKE UP
REEL SENSOR SUPPLY
NEUTRAL
LIVE
J1 AV1
J2 AV2/CATL
J3 OUT
J4 OUT
J5 IN
J6 COMP/R.PAUSE/RAE
J7 CABLE BOX CTL
UL MARK
A
P
O
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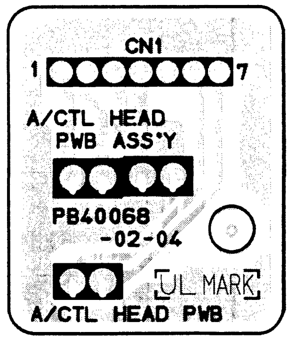
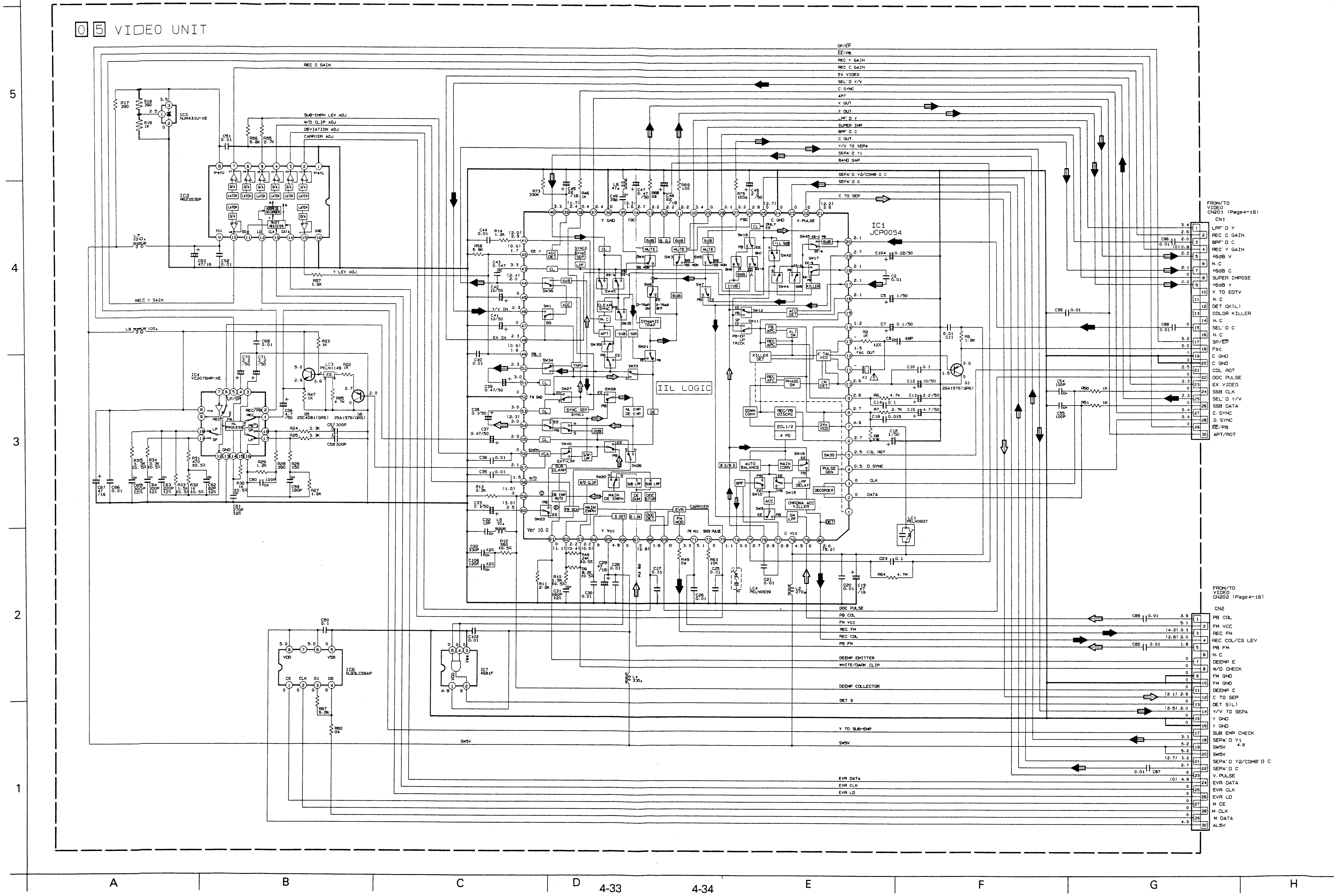
V1

— A/C HEAD —

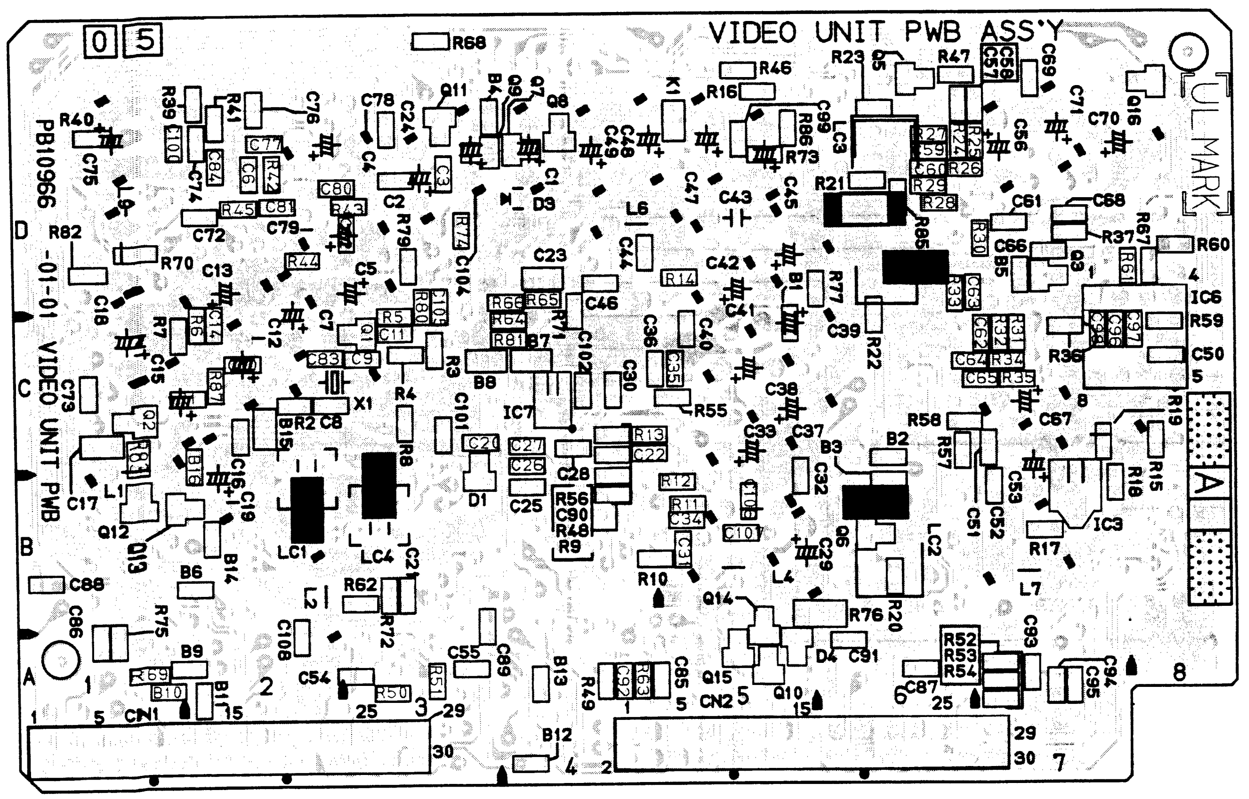

CN1
1
7
A/CTL HEAD PWB ASS'Y
PB40068 -02-04
UL MARK
A/CTL HEAD PWB

4.14 VIDEO UNIT SCHEMATIC DIAGRAM

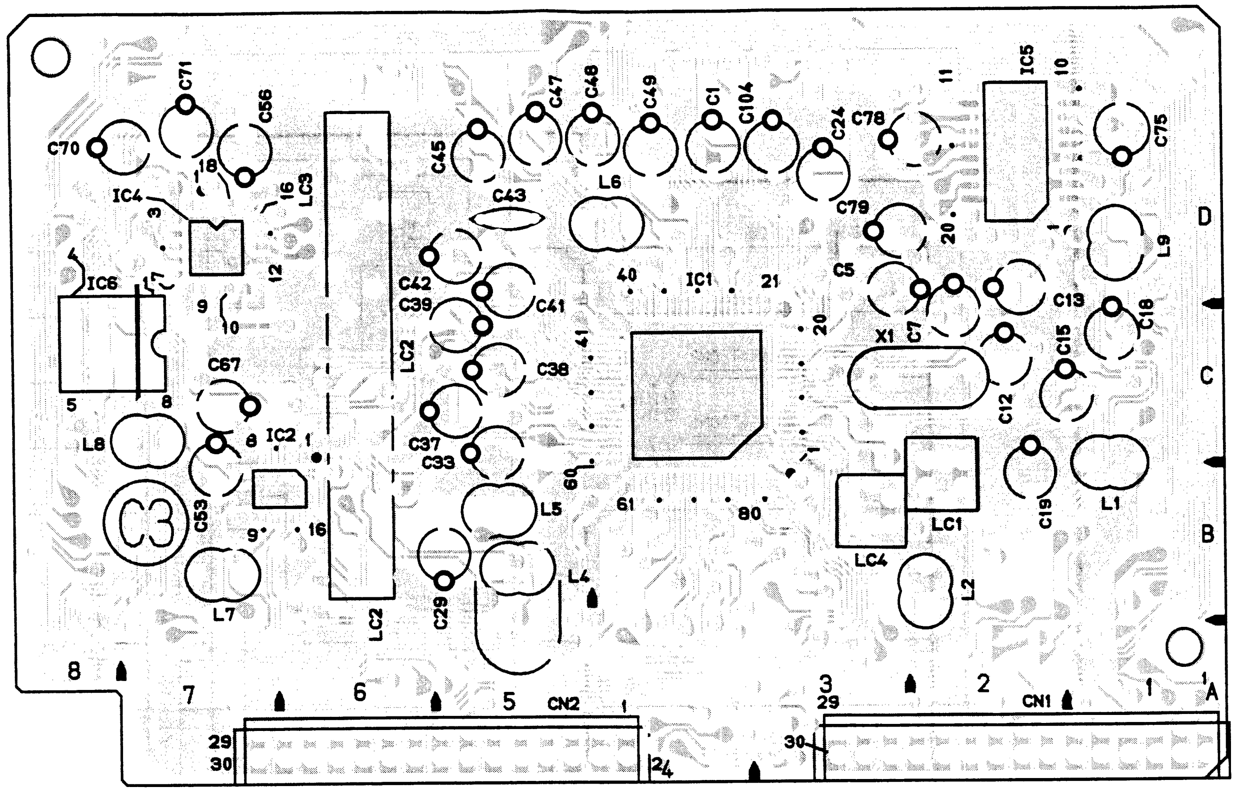

05 VIDEO UNIT
IC1 JCP0054
IIL LOGIC
IC2 MB2353GP
IC3 NJM431U-XE
IC4 VC2076MR-XE
IC6 XL93LC56AP
IC7 4S81F
Q1 2SA1576(QRS)
Q5 2SC4081(QRS)
Q6 2SA1576(QRS)
LC1 PELN0937
LC3 PELN1149
LC4 PELN0939
X1
Ver 10.0
REC C GAIN
REC Y GAIN
SUB-EMPH LEV ADJ
W/D CLIP ADJ
DEVIATION ADJ
CARRIER ADJ
Y LEV ADJ
SP/EP
EE/PB
REC Y GAIN
REC C GAIN
EX VIDEO
SEL'D Y/V
C. SYNC
APT
Y OUT
Y OUT
LPF'D Y
SUPER IMP
BPF'D C
C OUT
Y/V TO SEPA
SEPA'D Y1
BAND GAP
SEPA'D Y2/COMB'D C
SEPA'D C
C TO SEP
DOC PULSE
PB COL
FM Vcc
REC FM
REC COL
PB FM
DEEMP EMITTER
WHITE/DARK CLIP
DEEMP COLLECTOR
DET S
Y TO SUB-EMP
SW5V
EVR DATA
EVR CLK
EVR LD
FROM/TO VIDEO CN201 (Page4-16)
CN1
1 LPF'D Y 3.4
2 REC C GAIN 2.6
3 BPF'D C 2.0
4 REC Y GAIN (0) 0.8
5 +6dB V 2.2
6 N.C
7 +6dB C 2.1
8 SUPER IMPOSE 0
9 +6dB Y 2.2
10 Y TO EDTV
11 N.C
12 DET CK(L)
13 COLOR KILLER
14 N.C
15 SEL'D C 0
16 N.C
17 SP/EP 5.2
18 Fsc 2.0
19 C GND 0
20 C GND 0
21 COL ROT 2.5
22 DOC PULSE 0
23 EX VIDEO 2.3
24 SSB CLK 0
25 SEL'D Y/V 2.3
26 SSB DATA 0
27 C. SYNC 0.4
28 D. SYNC 0.4
29 EE/PB 0
30 APT/ROT
C86 0.01
C88 0.01
FROM/TO VIDEO CN202 (Page4-16)
CN2
1 PB COL 3.9
2 FM VCC 5.1
3 REC FM (4.2) 3.3
4 REC COL/CS LEV (2.6) 2.0
5 PB FM 1.8
6 N.C
7 DEEMP E 0
8 W/D CHECK 0
9 FM GND 0
10 FM GND 0
11 DEEMP C 0
12 C TO SEP (2.1) 2.8
13 DET S(L) 0
14 Y/V TO SEPA (2.5) 2.0
15 Y GND 0
16 Y GND 0
17 SUB EMP CHECK
18 SEPA'D Y1 3.3
19 SW5V 5.2 4.9
20 SW5V 5.2
21 SEPA'D Y2/COMB'D C (2.7) 3.2
22 SEPA'D C 2.7
23 V. PULSE 0
24 EVR DATA (0) 4.9
25 EVR CLK 0
26 EVR LD 0
27 M CE 0
28 M CLK 0
29 M DATA 0
30 AL5V 4.9
C89 0.01
C85 0.01
C87 0.01
1
2
3
4
5
6
A
B
C
D
E
F
G
H

4.15 VIDEO UNIT CIRCUIT BOARD

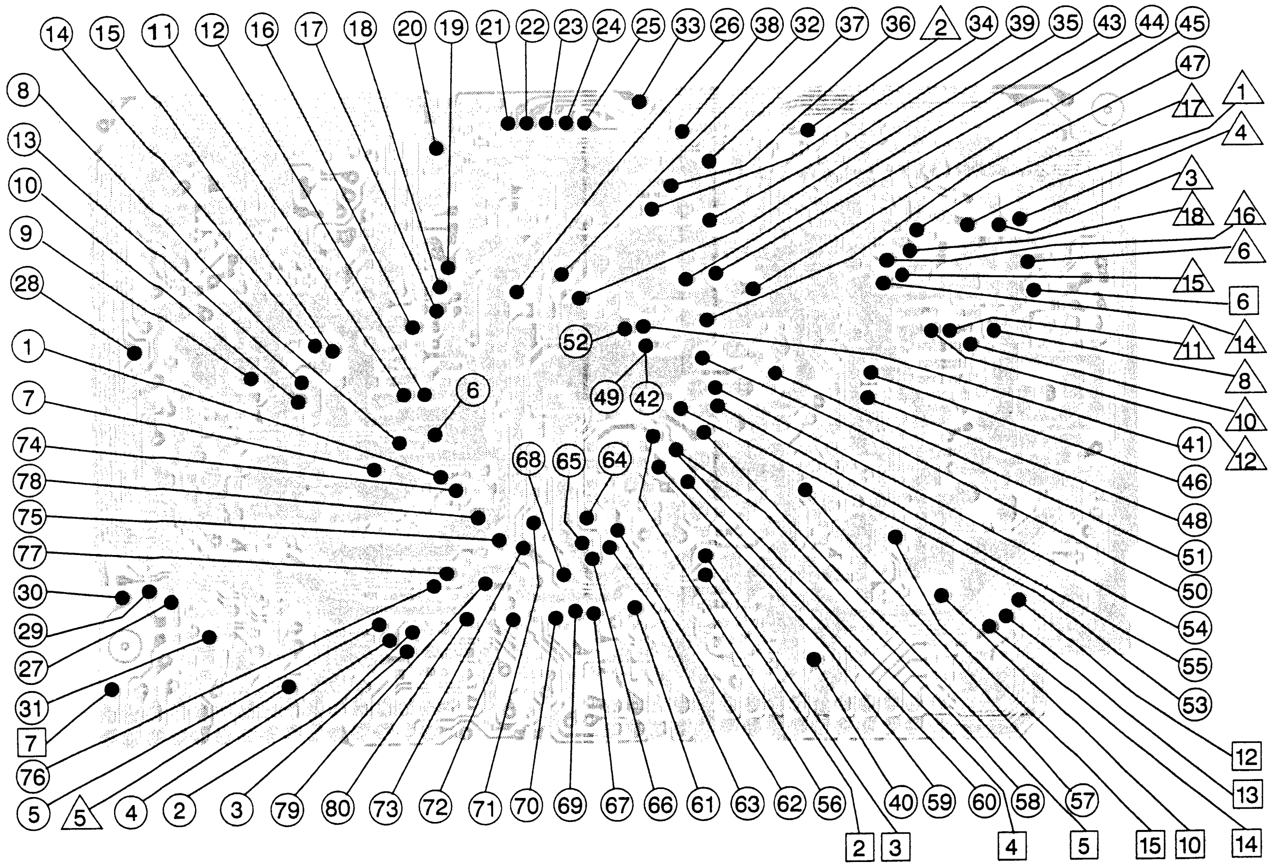
— FOIL SIDE —


VIDEO UNIT PWB ASS'Y
PB10966-01-01 VIDEO UNIT PWB
UL MARK
0 5
IC1
IC3
IC6
IC7
LC1
LC2
LC4
X1
CN1
CN2
A
B
C
D
1
2
3
4
5
6
7
8

— COMPONENT SIDE —


IC1
IC2
IC4
IC5
IC6
C3
LC1
LC2
LC3
LC4
X1
CN1
CN2
A
B
C
D
1
2
3
4
5
6
7
8

— IC PIN NUMBER LOCATION — ○ → IC1 △ → IC4 □ → IC2


⑭ ⑮ ⑪ ⑫ ⑯ ⑰ ⑱ ⑳ ⑲ ㉑ ㉒ ㉓ ㉔ ㉕ ㉝ ㉖ ㊳ ㉜ ㊲ ㊱ △2 ㉞ ㊴ ㉟ ㊸ ㊹ ㊺
㊼ △17 △1 △4 △3 △18 △16 △6 △15 □6 △14 △11 △8 △10 △12
⑧ ⑬ ⑩ ⑨ ㉘ ① ⑦ ㉛ ㉘ ㊷ ㊾ ⑥ ㊽ ㊿ ㊿
(74) (78) (75) (77) ㉚ ㉙ ㉗ ㉛ □7 (76) ⑤ △5 ④ ② ③ (79) (80) (73) (72) (71) (70) (69) (67) (66) (61) (63) (62) (56) ㊵ (59) (60) (58) (57)
(68) (65) (64) ㊶ ㊻ ㊽ (51) ㊿ (54) (55) (53)
□12 □13 □2 □3 □4 □5 □15 □10 □14

COMPONENT PARTS LOCATION GUIDE <VIDEO UNIT>

REF.NO.	LOCATION		
CAPACITOR			
C1	A	D	4D
C2	B	C	3D
C3	B	C	3D
C4	B	C	3E
C5	A	D	3D
C6	B	C	2D
C7	A	D	2C
C8	B	C	2C
C9	B	C	3C
C10	B	C	2C
C11	B	C	3C
C12	A	D	2C
C13	A	D	2D
C14	B	C	2C
C15	A	D	1C
C16	B	C	2C
C17	B	C	1C
C18	A	D	1C
C19	A	D	2B
C20	B	C	3C
C21	B	C	3B
C22	B	C	4C
C23	B	C	4D
C24	A	D	3D
C25	B	C	4B
C26	B	C	4C
C27	B	C	4C
C28	B	C	4C
C29	A	D	5B
C30	B	C	4C
C31	B	C	5B
C32	B	C	5B
C33	A	D	5C
C34	B	C	5B
C35	B	C	5C
C36	B	C	4C
C37	A	D	5C
C38	A	D	5C
C39	A	D	6C
C40	B	C	5C
C41	A	D	5D
C42	A	D	5D
C43	A	D	5D
C44	B	C	4D
C45	A	D	5D
C46	B	C	4D
C47	A	D	5D
C48	A	D	4D
C49	A	D	4D
C50	B	C	8C
C51	B	C	7C
C52	B	C	7B
C53	A	D	7B
C54	B	C	3A
C55	B	C	3A
C56	A	D	7E
C57	B	C	6E
C58	B	C	7E
C59	B	C	6E
C60	B	C	6D
C61	B	C	7D
C62	B	C	7C
C63	B	C	7D
C64	B	C	6C
C65	B	C	7C
C66	B	C	7D
C67	A	D	7C
C68	B	C	7D
C69	B	C	7E
C70	A	D	7E
C71	A	D	7E
C72	B	C	2D
C73	B	C	1C
C74	B	C	2E
C75	A	D	1E
C76	B	C	2E
C77	B	C	2E
C78	A	D	2E
C79	A	D	2D
C80	B	C	2D
C81	B	C	2D
C82	B	C	3D
C83	B	C	2C
C84	B	C	2D
C85	B	C	5A
C86	B	C	1A
C87	B	C	6A
C88	B	C	1B
C89	B	C	3B
C90	B	C	4C
C91	B	C	6A
C92	B	C	4A
C93	B	C	7A
C94	B	C	7A
C95	B	C	7A
C96	B	C	7C
C97	B	C	8C
C98	B	C	7C
C99	B	C	5E
C100	B	C	1E
C101	B	C	3C
C102	B	C	4C
C104	A	D	3D
C105	B	C	3D
C106	B	C	5B
C107	B	C	5B
C108	B	C	2A
CONNECTOR			
CN1	A	D	1A
CN2	A	D	4A
DIODE			
D1	B	C	3C
D3	B	C	4D
D4	B	C	5A
IC			
IC1	A	C	4C
IC2	A	C	6B
IC3	B	C	7B
IC4	A	C	7D
IC5	A	C	2E
IC6	A	D	7D
IC7	B	C	4C
COIL			
L1	A	D	1C
L2	A	D	2B
L4	A	D	5B
L5	A	D	5B
L6	A	D	5D
L7	A	D	7B
L8	A	D	7C
L9	A	D	1D
TRANSISTOR			
Q1	B	C	3C
Q2	B	C	1C
Q3	B	C	7D
Q5	B	C	6E
Q6	B	C	6B
Q7	B	C	4E
Q8	B	C	4E
Q9	B	C	3E
Q10	B	C	5A
Q11	B	C	3E
Q12	B	C	1B
Q13	B	C	2B
Q14	B	C	5B
Q15	B	C	5A
Q16	B	C	8E
RESISTOR			
R1	B	C	2C
R2	B	C	2C
R3	B	C	3C
R4	B	C	3C
R5	B	C	3C
R6	B	C	2C
R7	B	C	1C
R8	B	C	3C
R9	B	C	4B
R10	B	C	4B
R11	B	C	5B
R12	B	C	5B
R13	B	C	4C
R14	B	C	5D
R15	B	C	8C
R16	B	C	5E
R17	B	C	7B
R18	B	C	7B
R19	B	C	7C
R20	B	C	6B
R21	B	C	6D
R22	B	C	6C
R23	B	C	6E
R24	B	C	6E
R25	B	C	7E
R26	B	C	6D
R27	B	C	6E
R28	B	C	6D
R29	B	C	6D
R30	B	C	7D
R31	B	C	7C
R32	B	C	7C
R33	B	C	6D
R34	B	C	7C
R35	B	C	7C
R36	B	C	7C
R37	B	C	7D
R39	B	C	2E
R40	B	C	1E
R41	B	C	2E
R42	B	C	2D
R43	B	C	3D
R44	B	C	2D
R45	B	C	2D
R46	B	C	5E
R47	B	C	6E
R48	B	C	4B
R49	B	C	4A
R50	B	C	3A
R51	B	C	3A
R52	B	C	7A
R53	B	C	7A
R54	B	C	7A
R55	B	C	5C
R56	B	C	4C
R57	B	C	6C
R58	B	C	6C
R59	B	C	8C
R60	B	C	8D
R61	B	C	8D
R62	B	C	3B
R63	B	C	4A
R64	B	C	4C
R65	B	C	4D
R66	B	C	4D
R67	B	C	8D
R68	B	C	3E
R69	B	C	1A
R70	B	C	1D
R71	B	C	4D
R72	B	C	3B
R73	B	C	5E
R74	B	C	3D
R75	B	C	1A
R76	B	C	6B
R77	B	C	6D
R79	B	C	3D
R80	B	C	3D
R81	B	C	4C
R82	B	C	1D
R83	B	C	1C
R85	B	C	6D
R86	B	C	5E
R87	B	C	2C
OTHERS			
K1	B	C	5E
LC1	A	D	2C
LC2	A	D	6B
LC3	A	D	6E
LC4	A	D	3B
PC0313	B	C	7B
X1	A	D	3C

6

5

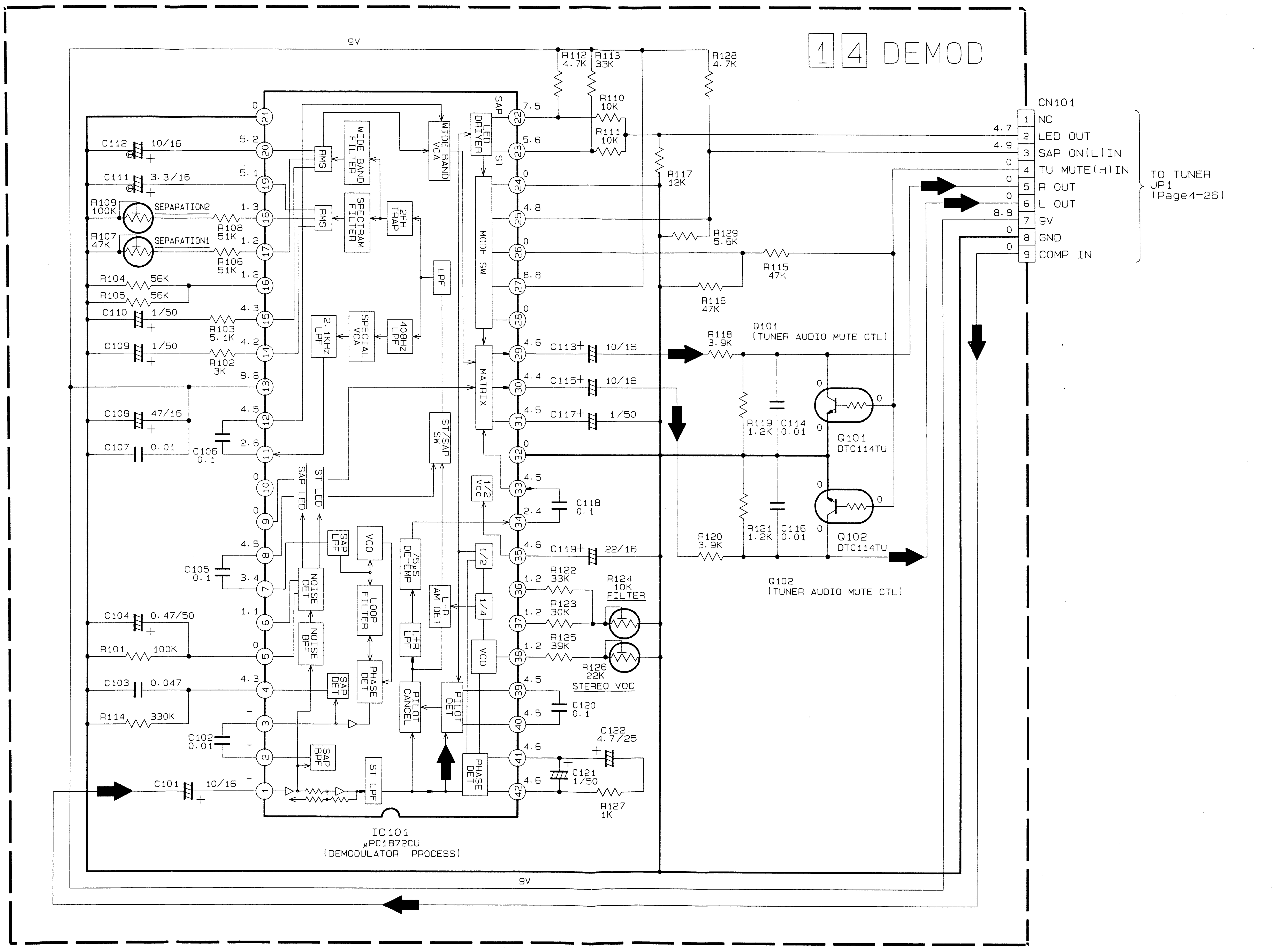
4

3

2

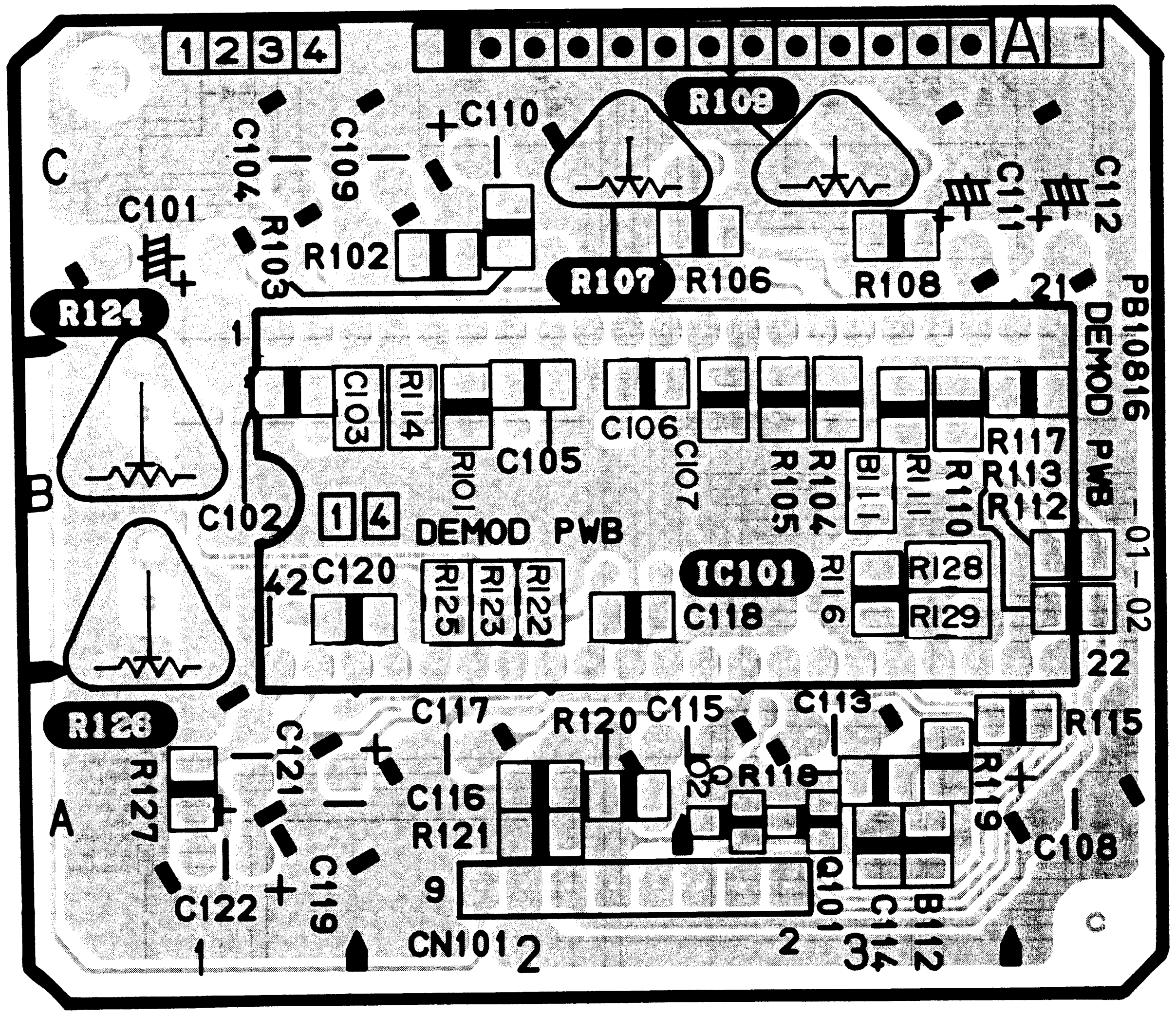
1

4.16 DEMODULATOR SCHEMATIC DIAGRAM


14 DEMOD
9V
R112 4.7K
R113 33K
R128 4.7K
R110 10K
R111 10K
R117 12K
R129 5.6K
R115 47K
R116 47K
R118 3.9K
R119 1.2K
C114 0.01
R120 3.9K
R121 1.2K
C116 0.01
Q101 (TUNER AUDIO MUTE CTL)
Q101 DTC114TU
Q102 DTC114TU
Q102 (TUNER AUDIO MUTE CTL)
C113 10/16
C115 10/16
C117 1/50
C118 0.1
C119 22/16
R122 33K
R123 30K
R124 10K FILTER
R125 39K
R126 22K STEREO VOC
C120 0.1
C122 4.7/25
C121 1/50
R127 1K
C112 10/16
C111 3.3/16
R109 100K SEPARATION2
R107 47K SEPARATION1
R108 51K
R106 51K
R104 56K
R105 56K
C110 1/50
R103 5.1K
C109 1/50
R102 3K
C108 47/16
C107 0.01
C106 0.1
C105 0.1
C104 0.47/50
R101 100K
C103 0.047
R114 330K
C102 0.01
C101 10/16
RMS
WIDE BAND FILTER
WIDE BAND VCA
LED DRIVER
SAP
ST
SPECTRAM FILTER
2FH TRAP
MODE SW
LPF
2.1kHz LPF
SPECIAL VCA
408Hz LPF
MATRIX
ST/SAP SW
SAP LED
ST LED
1/2 Vcc
SAP LPF
VCO
75μS DE-EMP
1/2
1/4
NOISE DET
LOOP FILTER
L-R AM DET
NOISE BPF
L+R LPF
PHASE DET
SAP DET
PILOT CANCEL
PILOT DET
SAP BPF
ST LPF
IC101 μPC1872CU (DEMODULATOR PROCESS)
CN101
1 NC
2 LED OUT
3 SAP ON(L)IN
4 TU MUTE(H)IN
5 R OUT
6 L OUT
7 9V
8 GND
9 COMP IN
TO TUNER JP1 (Page4-26)
4.7
4.9
0
0
0
8.8
0
0
0 5.2 5.1 1.3 1.2 1.2 4.3 4.2 8.8 4.5 2.6 0 0 4.5 3.4 1.1 0 4.3 - - -
7.5 5.6 0 4.8 0 8.8 0 4.6 4.4 4.5 0 4.5 2.4 4.6 1.2 1.2 1.2 4.5 4.5 4.6 4.6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

A B C D E F G H

4.17 DEMODULATOR CIRCUIT BOARD

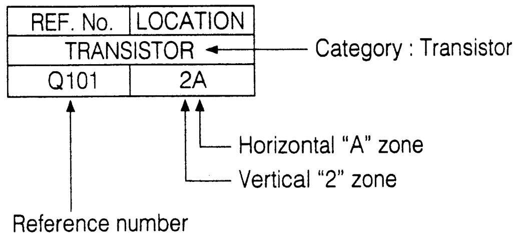

1 2 3 4
A
C
B
A
C101
C104
C109
C110
R109
R102
R103
R107
R106
R108
C111
C112
21
PB10816 DEMOD PWB -01-02
R124
1
C103
R114
R101
C105
C106
C107
R105
R104
B111
R111
R110
R117
R113
R112
C102
1 4
DEMOD PWB
42
C120
R125
R123
R122
IC101
C118
R116
R128
R129
22
R126
R127
C121
C117
R120
C115
C113
R115
C116
R121
Q102
R118
R119
C108
C122
C119
9
CN101
1
2
2
3
Q101
C114
B112

LEADLESS COMPONENT
PARTS LOCATION GUIDE

REF. No.	LOCATION
TRANSISTOR	
Q101	3A
Q102	3A
RESISTOR	
R101	2B
R102	2C
R103	2C
R104	3B
R105	3B
R106	3C
R108	3C
R110	3B
R111	3B
R112	4B
R113	4B
R114	2B
R115	4A
R116	3B
R117	4B
R118	3A
R119	3A
R120	2A
R121	2A
R122	2B
R123	2B
R125	2B
R127	1A
R128	3B
R129	3B
CAPACITOR	
C102	1B
C103	1B
C105	2B
C106	2B
C107	3B
C114	3A
C116	2A
C118	2B
C120	1B

MAIN COMPONENT
LOCATION GUIDE

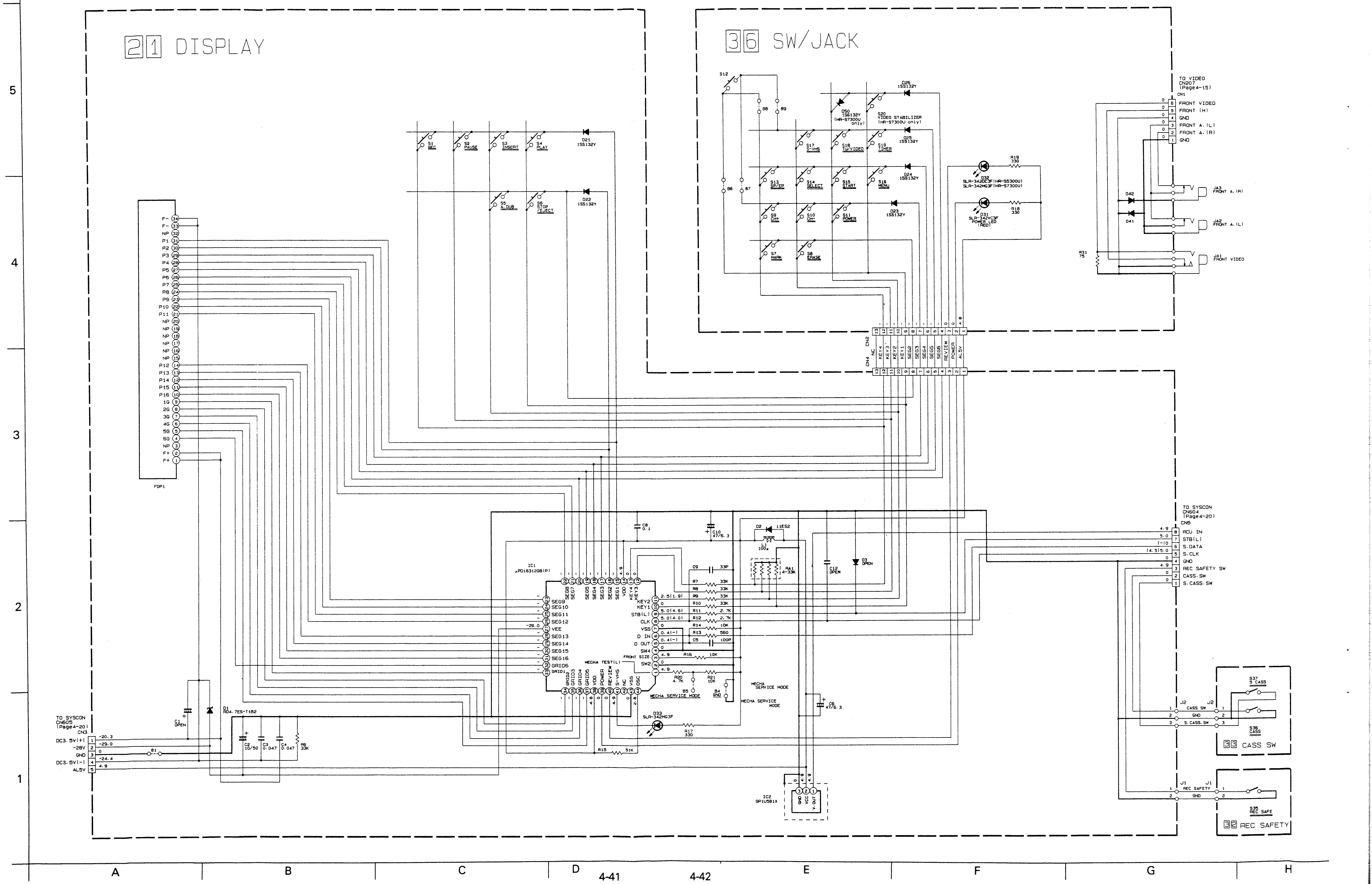
REF. No.	LOCATION
IC	
IC101	3B
TRANSISTOR	
Q101	3A
Q102	3A
ADJUSTMENT	
R107	2C
R109	3C
R124	1B
R126	1B
CONNECTOR	
CN101	2A



REF. No.	LOCATION
TRANSISTOR	
Q101	2A

Category : Transistor
Horizontal "A" zone
Vertical "2" zone
Reference number

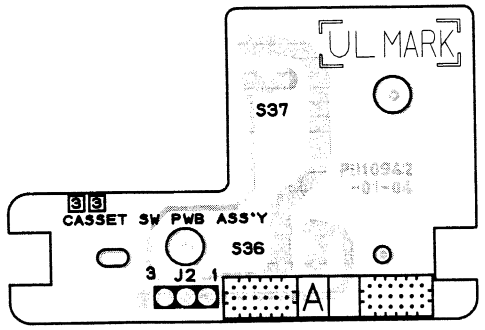
4.18 DISPLAY, SW/JACK, REC SAFETY AND CASSETTE SW SCHEMATIC DIAGRAMS



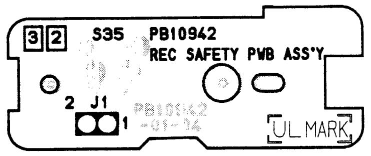
21 DISPLAY
36 SW/JACK
FDP1
IC1 µPD16312GB(P)
S1 REC
S2 PAUSE
S3 INSERT
S4 PLAY
S5 A.DUB
S6 STOP /EJECT
D21 1SS132Y
D22 1SS132Y
S7 MARK
S8 ERASE
S9 CH+
S10 CH-
S11 POWER
S12
S13 SP/EP
S14 SELECT
S15 START
S16 MENU
S17 S-VHS
S18 TV/VIDEO
S19 TIMER
S20 VIDEO STABILIZER (HR-S7300U only)
D50 1SS132Y (HR-S7300U only)
D23 1SS132Y
D24 1SS132Y
D25 1SS132Y
D26 1SS132Y
D32 SLR-342OC3F(HR-S5300U) SLR-342MG3F(HR-S7300U)
D31 SLR-342YC3F POWER LED (RED)
R18 330
R19 330
CN2
CN4
NC
KEY4
KEY3
KEY2
KEY1
SEG2
SEG3
SEG4
SEG5
SEG6
REVIEW
POWER
AL5V
TO VIDEO CN207 (Page4-15)
CN1
FRONT VIDEO
FRONT (H)
GND
FRONT A.(L)
FRONT A.(R)
JA3 FRONT A.(R)
JA2 FRONT A.(L)
JA1 FRONT VIDEO
D42
D41
R31 75
TO SYSCON CN604 (Page4-20)
CN5
RCU IN
STB(L)
S.DATA
S.CLK
GND
REC SAFETY SW
CASS.SW
S.CASS.SW
TO SYSCON CN605 (Page4-20)
CN3
DC3.5V(+)
-28V
GND
DC3.5V(-)
AL5V
D1 RD4.7ES-T1B2
C1 OPEN
C2 10/50
C3 0.047
C4 0.047
R6 33K
B1
C8 0.1
C10 47/6.3
D2 1SS82
L1 100µ
RA1 4-33K
C12 OPEN
D3 OPEN
C9 33P
R7 33K
R8 33K
R9 33K
R10 33K
R11 2.7K
R12 2.7K
R14 10K
R13 560
C5 100P
R16 10K
R20 4.7K
R21 10K
B5
B4 GND
MECHA SERVICE MODE
MECHA TEST(L)
FRONT SIZE
D33 SLR-342MG3F
R17 330
R15 51K
C6 47/6.3
IC2 GP1U581X
GND
VCC
V OUT
S37 S.CASS
S36 CASS
33 CASS SW
J2
CASS SW
S.CASS.SW
J1
REC SAFETY
S35 REC SAFE
33 REC SAFETY
A
B
C
D
E
F
G
H
1
2
3
4
5
6

4.19 DISPLAY, SW/JACK, REC SAFETY AND CASSETTE SW CIRCUIT BOARDS

— CASSETTE SW —


UL MARK
S37
PB10942
-01-04
3 3
CASSET SW PWB ASS'Y
S36
3 J2 1
A

— REC SAFETY —

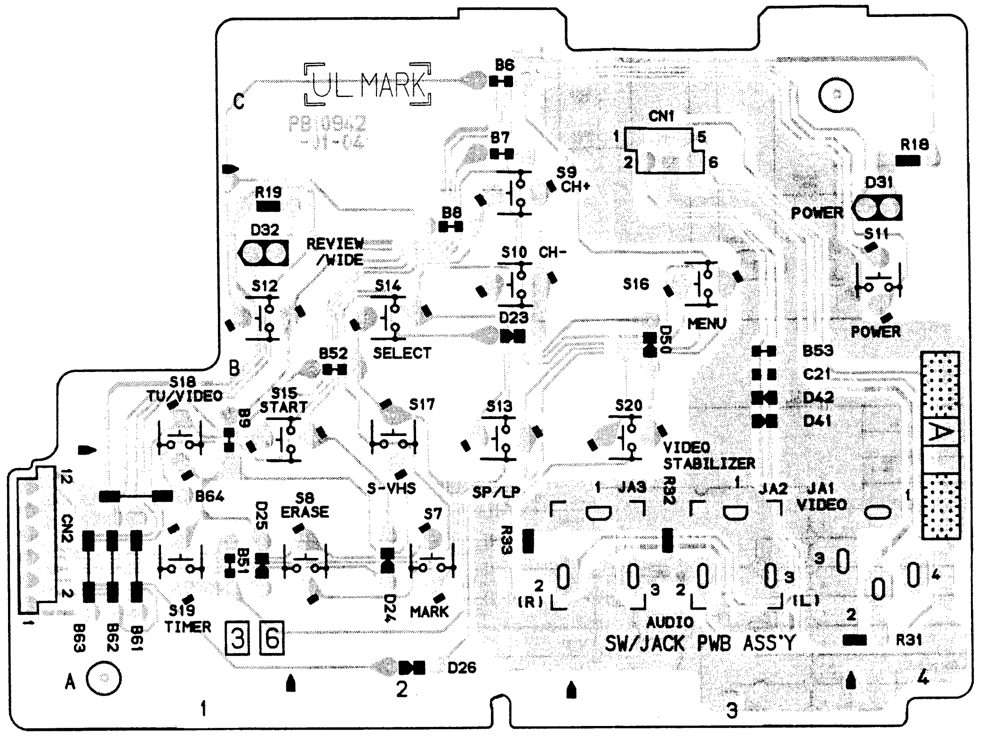

3 2
S35
PB10942
REC SAFETY PWB ASS'Y
2 J1 1
PB10942
-01-04
UL MARK

COMPONENT PARTS LOCATION GUIDE
<SW/JACK PWB>

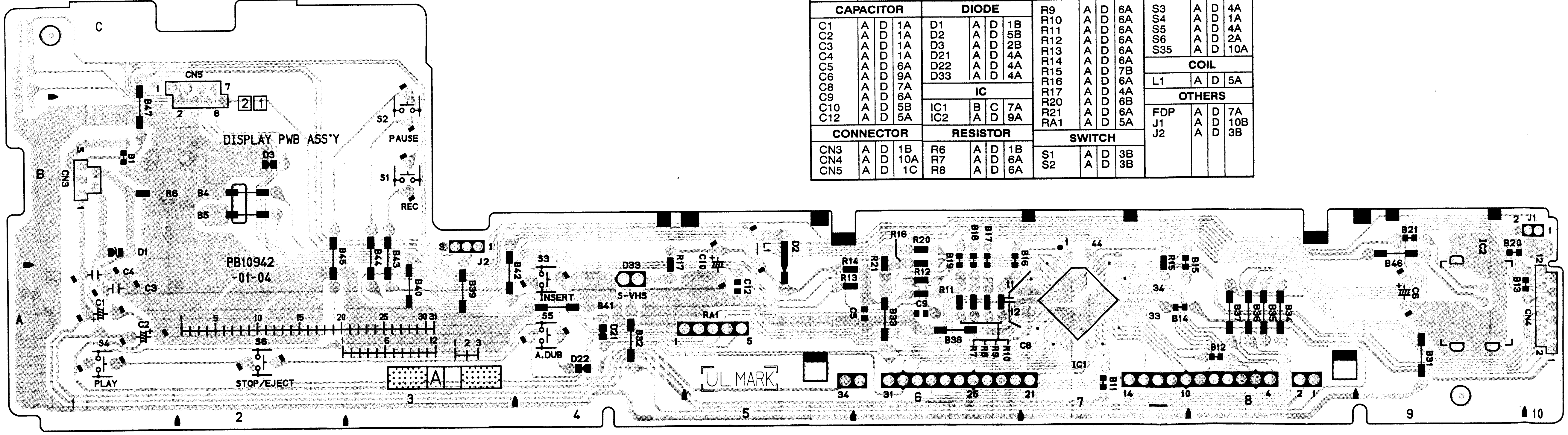
REF.NO.	LOCATION		
CAPACITOR			
C21	A	D	3B
CONNECTOR			
CN1	A	D	3C
CN2	A	D	1A
DIODE			
D23	A	D	2B
D24	A	D	2A
D25	A	D	1A
D26	A	D	2A
D31	A	D	4B
D32	A	D	1B
D41	A	D	3?
D41	A	D	3B
D42	A	D	3B
D50	A	D	3B
RESISTOR			
R18	A	D	4C
R19	A	D	2B
R31	A	D	4A

REF.NO.	LOCATION		
R32	A	D	3A
R33	A	D	2A
SWITCH			
S7	A	D	2A
S8	A	D	2A
S9	A	D	2B
S10	A	D	2B
S11	A	D	4B
S12	A	D	1B
S13	A	D	2B
S14	A	D	2B
S15	A	D	2B
S16	A	D	3B
S17	A	D	2B
S18	A	D	1B
S19	A	D	1A
S20	A	D	3B
OTHERS			
JA1	A	D	4A
JA2	A	D	3A
JA3	A	D	3A

— SW/JACK —


UL MARK
PB10942
-01-04
C
B6
B7
CN1
1
5
2
6
R18
D31
POWER
S9
CH+
R19
B8
D32
REVIEW
/WIDE
S10 CH-
S11
S12
S14
S16
MENU
D23
POWER
B52
SELECT
D50
B53
C21
D42
D41
S18
TU/VIDEO
B9
S15
START
S17
S13
S20
VIDEO
STABILIZER
CN2
B64
D25
S8
ERASE
S-VHS
SP/LP
JA3
R32
JA2
JA1
VIDEO
S7
R33
B51
D24
(R)
(L)
AUDIO
S19
TIMER
MARK
3 6
SW/JACK PWB ASS'Y
R31
B63
B62
B61
A
D26
1
2
3
4

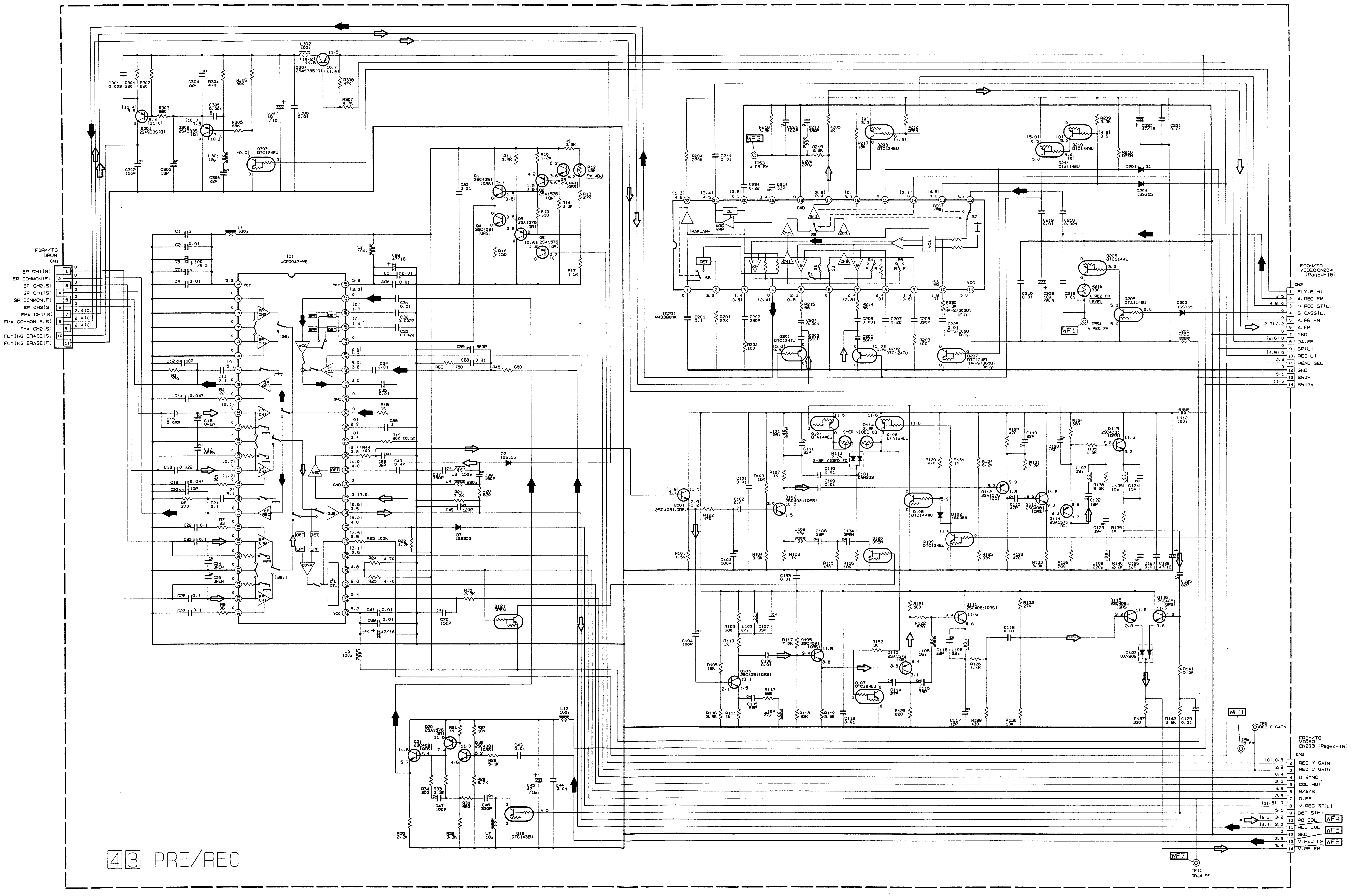
— DISPLAY —


C
CN5
1
7
2
8
B47
2 1
S2
PAUSE
DISPLAY PWB ASS'Y
D3
B1
CN3
R6
B4
B5
S1
REC
B
D1
C4
C3
PB10942
-01-04
B45
B44
B43
B40
B39
J2
B42
S3
INSERT
D33
S-VHS
R17
C10
L1
D2
R16
R20
B18
B17
R14
R13
R21
R12
B19
B16
R11
IC1
R15
B15
IC2
B21
J1
B20
B46
C6
B13
CN4
C1
C2
S4
PLAY
S6
STOP/EJECT
S5
A.DUB
D22
B41
D21
B32
RA1
C5
B33
C9
B38
R7
R8
R9
R10
C8
B14
B37
B36
B35
B34
B12
B31
B11
UL MARK
A
1
2
3
4
5
6
7
8
9
10

COMPONENT PARTS LOCATION GUIDE <DISPLAY>

REF.NO.	LOCATION		
CAPACITOR			
C1	A	D	1A
C2	A	D	1A
C3	A	D	1A
C4	A	D	1A
C5	A	D	6A
C6	A	D	9A
C8	A	D	7A
C9	A	D	6A
C10	A	D	5B
C12	A	D	5A
CONNECTOR			
CN3	A	D	1B
CN4	A	D	10A
CN5	A	D	1C
DIODE			
D1	A	D	1B
D2	A	D	5B
D3	A	D	2B
D21	A	D	4A
D22	A	D	4A
D33	A	D	4A
IC			
IC1	B	C	7A
IC2	A	D	9A
RESISTOR			
R6	A	D	1B
R7	A	D	6A
R8	A	D	6A
R9	A	D	6A
R10	A	D	6A
R11	A	D	6A
R12	A	D	6A
R13	A	D	6A
R14	A	D	6A
R15	A	D	7B
R16	A	D	6A
R17	A	D	4A
R20	A	D	6B
R21	A	D	6A
RA1	A	D	5A
SWITCH			
S1	A	D	3B
S2	A	D	3B
S3	A	D	4A
S4	A	D	1A
S5	A	D	4A
S6	A	D	2A
S35	A	D	10A
COIL			
L1	A	D	5A
OTHERS			
FDP	A	D	7A
J1	A	D	10B
J2	A	D	3B

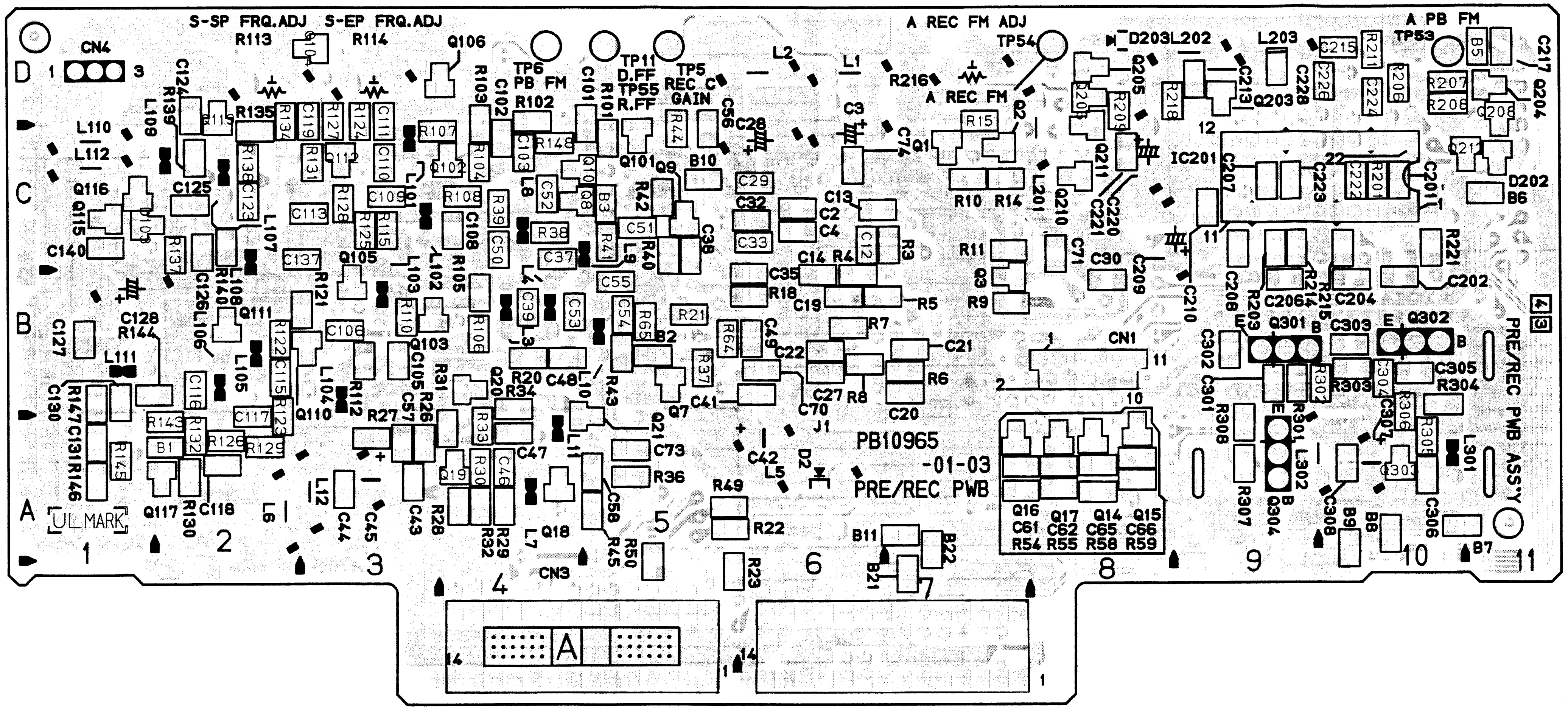
4.20 PRE/REC SCHEMATIC DIAGRAM



FORM/TO DRUM CN1
EP CH1(S)
EP COMMON(F)
EP CH2(S)
SP CH1(S)
SP COMMON(F)
SP CH2(S)
FMA CH1(S)
FMA COMMON(F.S)
FMA CH2(S)
FLYING ERASE(S)
FLYING ERASE(F)
IC1 JCP0047-WE
IC201 AN3380NK
FROM/TO VIDEO CN204 (Page4-16)
CN2
FLY.E(H)
A.REC FM
H.REC STIL(L)
S.CASS(L)
A.PB FM
A.FM
GND
DA.FF
SP(L)
REC(L)
HEAD SEL
GND
SW5V
SW12V
FROM/TO VIDEO CN203 (Page4-16)
CN3
REC Y GAIN
REC C GAIN
D.SYNC
COL ROT
M/A/S
D.FF
V.REC STIL(L)
DET S(H)
PB COL
REC COL
GND
V.REC FM
V.PB FM
WF1
WF2
WF3
WF4
WF5
WF6
WF7
TP5 REC C GAIN
TP6 PB FM
TP11 DRUM FF
TP53 A PB FM
TP54 A REC FM
FM ADJ
A REC FM LEVEL
S-EP VIDEO EQ
S-SP VIDEO EQ
43 PRE/REC

NOTE: For PRE/REC waveforms, please refer to page 4-48.

4.21 PRE/REC CIRCUIT BOARD



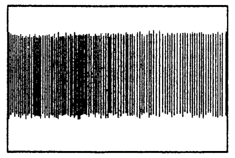
COMPONENT PARTS LOCATION GUIDE <PRE/REC>

REF.NO.	LOCATION		
CAPACITOR			
C1	A	C	6C
C2	B	C	6C
C3	A	D	6C
C4	B	C	6C
C5	A	C	6C
C12	B	C	6C
C13	B	C	6C
C14	B	C	6B
C15	A	C	7C
C16	A	C	7B
C17	A	C	7B
C18	A	C	7B
C19	B	C	6B
C20	B	C	7B
C21	B	C	7B
C22	B	C	6B
C23	A	C	7B
C24	A	C	7B
C25	A	C	7B
C26	A	C	7B
C27	B	C	6B
C28	A	D	6C
C29	B	C	6C
C30	B	C	8B
C31	A	C	5C
C32	B	C	6C
C33	B	C	6C
C34	A	C	5C
C35	B	C	6B
C36	A	C	5B
C37	B	C	4C
C38	B	C	5C
C39	B	C	4B
C40	A	C	5B
C41	B	C	6B
C42	A	D	6A
C43	B	C	3A
C44	B	C	3A
C45	A	D	3A
C46	B	C	4A
C47	B	C	4A
C48	B	C	4B
C49	B	C	6B
C50	B	C	4C
C51	B	C	5C
C52	B	C	4C
C53	B	C	4B
C54	B	C	5B
C55	B	C	5B
C56	B	C	5C
C57	B	C	3A
C58	B	C	5A
C59	A	C	5C
C60	A	C	5C
C61	B	C	7A
C62	B	C	8A
C65	B	C	8A
C66	B	C	8A
C67	A	C	7A
C68	A	C	5C
C69	A	C	6B
C70	B	C	6B
C71	B	C	8C
C72	A	C	5C
C73	B	C	5A
C74	B	C	6C
C101	B	C	4D
C102	B	C	4C
C103	B	C	4C
C104	A	C	4C
C105	B	C	3B
C106	B	C	3B
C107	A	C	3B
C108	B	C	4C
C109	B	C	3C
C110	B	C	3C
C111	B	C	3D
C112	A	C	3B
C113	B	C	3C
C114	A	C	2B
C115	B	C	2B
C116	B	C	2B
C117	B	C	2A
C118	B	C	2A
C119	B	C	3D
C120	A	C	3C
C121	A	C	4A
C122	A	C	2C
C123	B	C	2C
C124	B	C	2D
C125	B	C	2C
C126	B	C	2C
C127	B	C	1B
C128	A	D	1B
C129	A	C	3A
C130	B	C	1B
C131	B	C	1A
C132	A	C	3B
C133	A	C	3B
C134	A	C	3C
C135	A	C	3B
C136	A	C	2A
C137	B	C	3C
C138	A	C	4B
C139	A	C	3C
C140	B	C	1C
C141	A	C	2C
C201	B	C	10C
C202	B	C	10B
C203	A	C	10C
C204	B	C	10B
C205	A	C	9B
C206	B	C	9B
C207	B	C	9C
C208	B	C	9C
C209	A	D	9C
C210	B	C	9C
C211	A	C	10C
C213	B	C	9D
C214	A	C	10D
C215	B	C	10D
C216	A	C	8D
C217	B	C	11D
C218	A	C	8D
C219	A	C	8C
C220	A	D	8C
C221	B	C	8C
C222	B	C	10C
C223	B	C	9C
C224	B	C	10D
C225	A	C	9C
C226	B	C	10D
C227	A	C	9D
C228	B	C	9D
C301	B	C	9B
C302	B	C	9B
C303	B	C	10B
C304	B	C	10B
C305	B	C	10B
C306	B	C	10A
C307	A	D	10A
C308	B	C	10A
C310	A	C	9B
C311	A	C	10B
C312	A	C	10B
CONNECTOR			
CN1	A	D	7B
CN2	A	D	7A
CN3	A	D	5A
CN4	A	D	1D
DIODE			
D2	B	C	6A
D3	A	C	8A
D4	A	C	7A
D5	A	C	8A
D7	A	C	5A
D101	A	C	3C
D102	A	C	4C
D103	B	C	1C
D201	A	C	11C
D202	B	C	11C
D203	B	C	8D
D204	A	C	10C
IC			
IC1	A	C	6B
IC201	A	D	10C
COIL			
L1	A	D	6D
L2	A	D	6D
L3	A	D	4B
L4	A	D	4B
L5	A	D	6A
L6	A	D	2A
L7	A	D	4A
L8	A	D	4C
L9	A	D	4B
L10	A	D	5B
L11	A	D	4A
L12	A	D	3A
L101	A	D	3C
L102	A	D	3C
L103	A	D	3B
L104	A	D	3A
L105	A	D	2B
L106	A	D	2B
L107	A	D	2C
L108	A	D	2B
L109	A	D	2C
L110	A	D	1C
L111	A	D	1B
L112	A	D	1C
L201	A	D	8C
L202	A	D	9D
L203	A	D	9D
L301	A	D	10A
L302	A	D	10A
TRANSISTOR			
Q1	B	C	7C
Q2	B	C	7C
Q3	B	C	7B
Q4	A	C	7C
Q5	A	C	8C
Q6	A	C	7D
Q7	B	C	5B
Q8	B	C	4C
Q9	B	C	5C
Q10	B	C	4C
Q11	A	C	5B
Q14	B	C	8A
Q15	B	C	8A
Q16	B	C	7A
Q17	B	C	8A
Q18	B	C	4A
Q19	B	C	4A
Q20	B	C	4B
Q21	B	C	4A
Q23	A	C	7A
Q24	A	C	8A
Q25	A	C	8A
Q26	A	C	8A
Q27	A	C	5A
Q101	B	C	5C
Q102	B	C	4C
Q103	B	C	3B
Q104	B	C	3D
Q105	B	C	3B
Q106	B	C	3D
Q107	A	C	2A
Q108	A	C	3C
Q109	A	C	3C
Q110	B	C	3B
Q111	B	C	2B
Q112	B	C	3C
Q113	A	C	2C
Q114	A	C	2C
Q115	B	C	1C
Q116	B	C	1C
Q117	B	C	2A
Q118	A	C	1A
Q119	B	C	2D
Q120	A	C	3C
Q121	A	C	5A
Q201	A	C	10C
Q202	A	C	9C
Q203	B	C	9D
Q204	B	C	11D
Q205	B	C	8D
Q206	B	C	8D
Q207	A	C	8C
Q208	B	C	11D
Q209	A	C	10C
Q210	B	C	8C
Q211	B	C	8C
Q212	B	C	11C
Q301	A	D	9B
Q302	A	D	10B
Q303	B	C	10A
Q304	A	D	9A
RESISTOR			
R3	B	C	7C
R4	B	C	6B
R5	B	C	7B
R6	B	C	7B
R7	B	C	6B
R8	B	C	6B
R9	B	C	7B
R10	B	C	7C
R11	B	C	7C
R12	A	C	8B
R13	A	C	8C
R14	B	C	7C
R15	B	C	7D
R16	A	C	7C
R17	A	C	8C
R18	B	C	6B
R19	A	C	5B
R20	B	C	4B
R21	B	C	5B
R22	B	C	5A
R23	B	C	5A
R24	A	C	6A
R25	A	C	6A
R26	B	C	3A
R27	B	C	3A
R28	B	C	4A
R29	B	C	4A
R30	B	C	4A
R31	B	C	4A
R32	B	C	4A
R33	B	C	4A
R34	B	C	4B
R35	A	C	5A
R36	B	C	5A
R37	B	C	5B
R38	B	C	4C
R39	B	C	4C
R40	B	C	5C
R41	B	C	5C
R42	B	C	5C
R43	B	C	5B
R44	B	C	5C
R45	B	C	5A
R46	A	C	7D
R47	A	C	7C
R48	A	C	4C
R49	B	C	5A
R50	B	C	5A
R51	A	C	7A
R52	A	C	8A
R54	B	C	7A
R55	B	C	8A
R58	B	C	8A
R59	B	C	8A
R60	A	C	6A
R63	A	C	5C
R64	B	C	5B
R65	B	C	5B
R101	B	C	5C
R102	B	C	4D
R103	B	C	4D
R104	B	C	4C
R105	B	C	4B
R106	B	C	4B
R107	B	C	3C
R108	B	C	4C
R109	A	C	3B
R110	B	C	3B
R111	A	C	4B
R112	B	C	3B
R113	A	D	2D
R114	A	D	3D
R115	B	C	3C
R116	A	C	3C
R117	A	C	3B
R118	A	C	3B
R119	A	C	3B
R120	A	C	4D
R121	B	C	3B
R122	B	C	2B
R123	B	C	2A
R124	B	C	3D
R125	B	C	3C
R126	B	C	2A
R127	B	C	3D
R128	B	C	3C
R129	B	C	2A
R130	B	C	2A
R131	B	C	3C
R132	B	C	2A
R133	A	C	3C
R134	B	C	2D
R135	B	C	2C
R136	A	C	3C
R137	B	C	2C
R138	B	C	2C
R139	B	C	2C
R140	B	C	2C
R141	A	C	1C
R142	A	C	4B
R143	B	C	2A
R144	B	C	2B
R145	B	C	1A
R146	B	C	1A
R147	B	C	1B
R148	B	C	4C
R149	A	C	4C
R150	A	C	4B
R151	A	C	3D
R152	A	C	2A
R201	B	C	10C
R202	A	C	10B
R203	B	C	9C
R204	A	C	10D
R205	A	C	9D
R206	B	C	10D
R207	B	C	10D
R208	B	C	10D
R209	B	C	8D
R210	A	C	11D
R211	B	C	10D
R212	A	C	10D
R214	B	C	9C
R215	B	C	10C
R216	A	D	7D
R217	A	C	10D
R218	B	C	9D
R219	A	C	9D
R220	A	C	9C
R221	B	C	10C
R222	A	C	11D
R223	A	C	8D
R224	A	C	10B
R225	A	C	9B
R301	B	C	9B
R302	B	C	10B
R303	B	C	10B
R304	B	C	10B
R305	B	C	10A
R306	B	C	10B
R307	B	C	9A
R308	B	C	9A
TEST POINT			
TP5	A	D	5D
TP6	A	D	4D
TP11	A	D	5D
TP53	A	D	10D
TP54	A	D	8D

WAVEFORMS

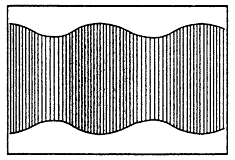
— PRE/REC —

WF1 TP54 A. REC FM



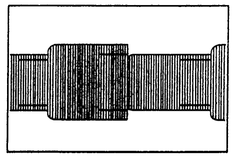
REC 0.3 Vp-p
5 mV/1 msec/DIV

WF2 TP53 A. PB FM



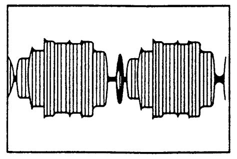
PB 0.05 Vp-p
5 mV/1 msec/DIV

WF3 TP6 PB FM



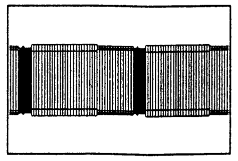
PB 0.5 Vp-p
10 mV/5 msec/DIV

WF4 CN3-11 REC COLOR



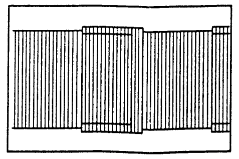
REC 0.54 Vp-p
20 mV/20 µsec/DIV

WF5 CN3-13 V. REC FM



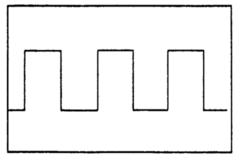
REC 0.3 Vp-p
10 mV/5 msec/DIV

WF6 CN3-14 V. PB FM



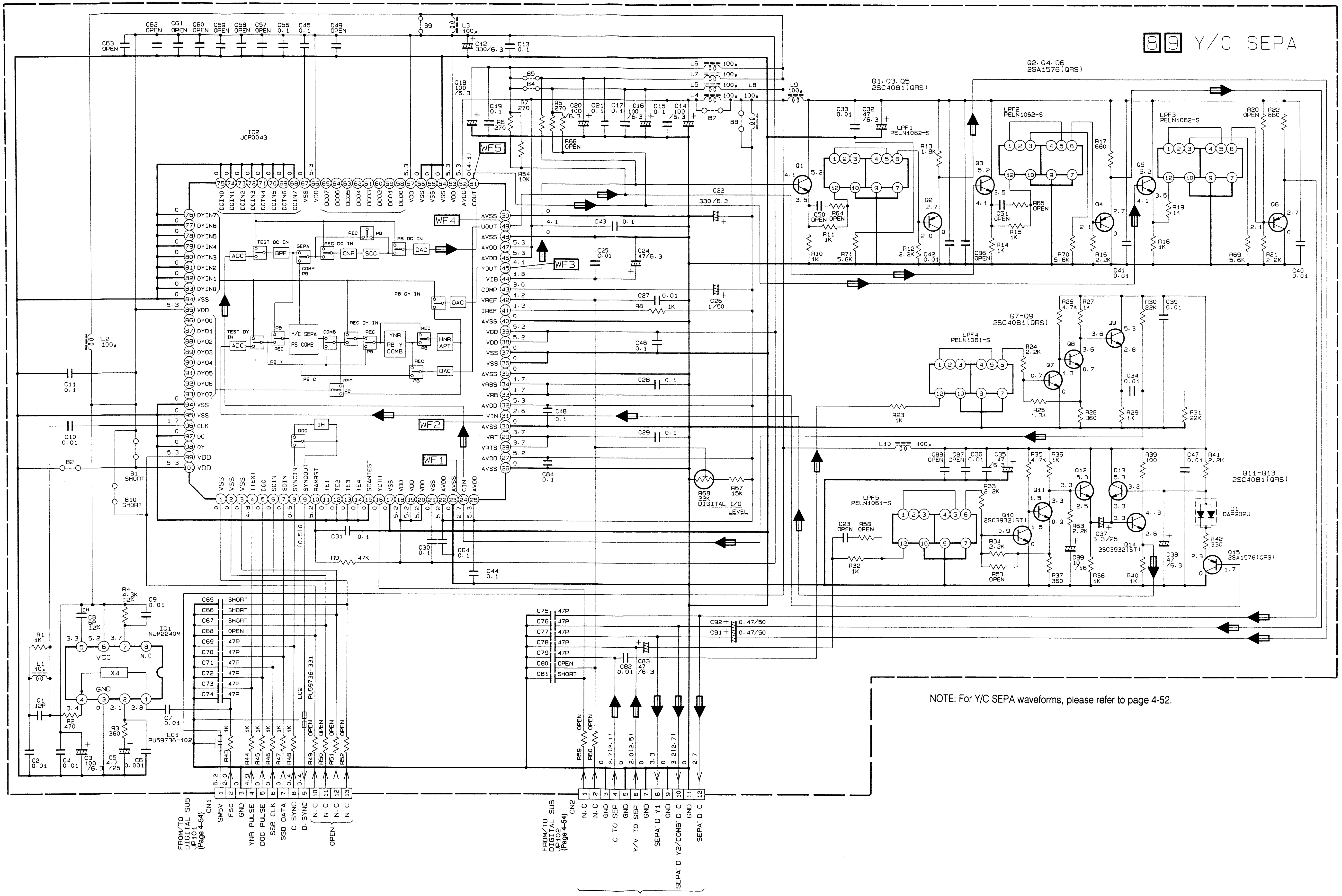
PB 0.35 Vp-p
20 mV/5 msec/DIV

WF7 TP11 D. FF



REC/PB 5.1 Vp-p
0.2 V/10 msec/DIV

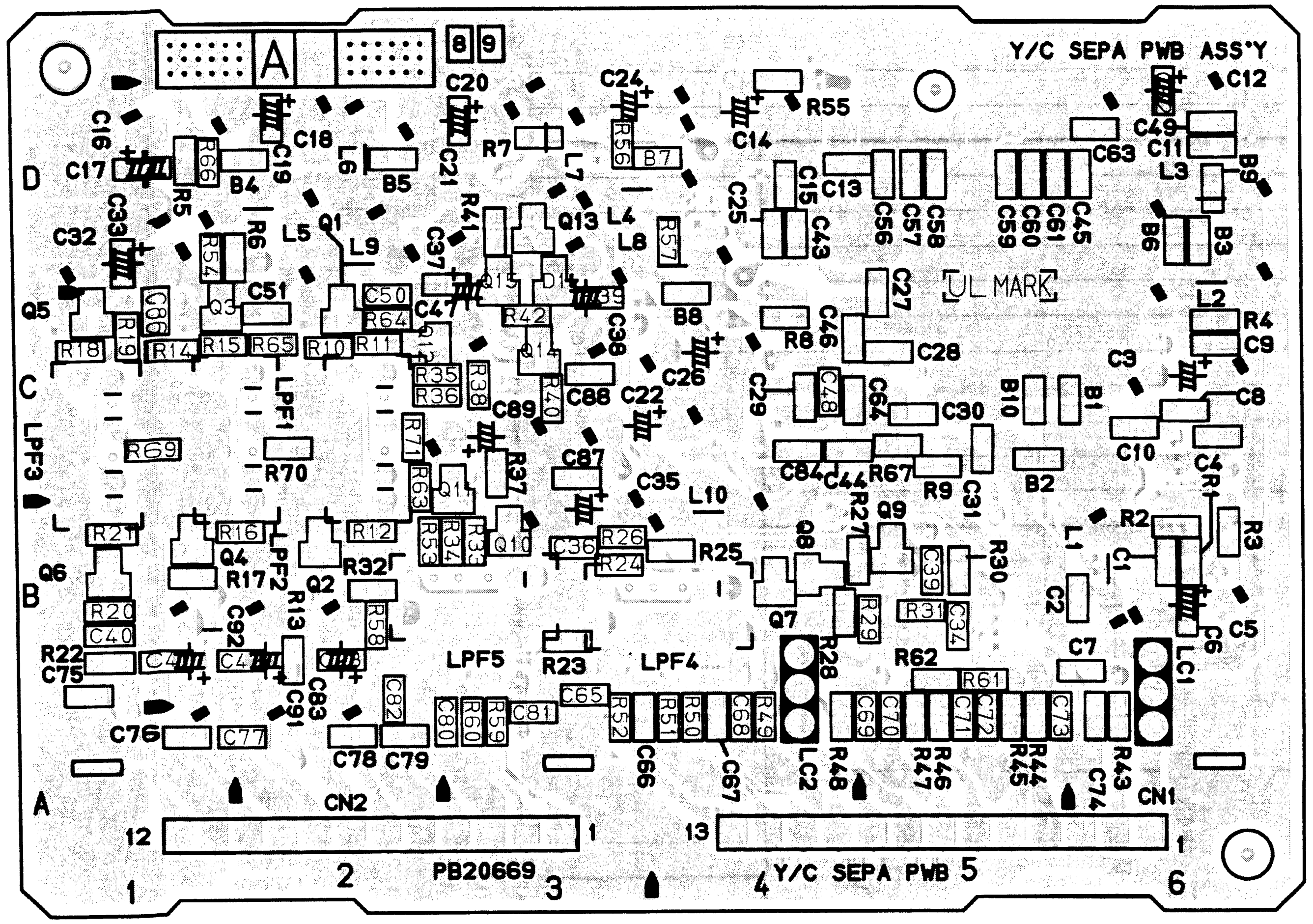
4.22 Y/C SEPA SCHEMATIC DIAGRAM


89 Y/C SEPA
IC2 JCP0043
IC1 NJM2240M
Q1, Q3, Q5 2SC4081(QRS)
Q2, Q4, Q6 2SA1576(QRS)
Q7-Q9 2SC4081(QRS)
Q10 2SC3932(ST)
Q14 2SC3932(ST)
Q11-Q13 2SC4081(QRS)
Q15 2SA1576(QRS)
D1 DAP202U
LPF1 PELN1062-S
LPF2 PELN1062-S
LPF3 PELN1062-S
LPF4 PELN1061-S
LPF5 PELN1061-S
LC1 PU59736-102
LC2 PU59736-331
R68 22K DIGITAL I/O LEVEL
WF1
WF2
WF3
WF4
WF5
B1 SHORT
B10 SHORT
FROM/TO DIGITAL SUB JP101 (Page 4-54) CN1
SW5V
FSC
GND
YNR PULSE
DOC PULSE
SSB CLK
SSB DATA
C. SYNC
D. SYNC
N.C
OPEN
FROM/TO DIGITAL SUB JP102 (Page 4-54) CN2
C TO SEP
Y/V TO SEP
SEPA'D Y1
SEPA'D Y2/COMB'D C
SEPA'D C
1
2
3
4
5
6
A
B
C
D
E
F
G
H

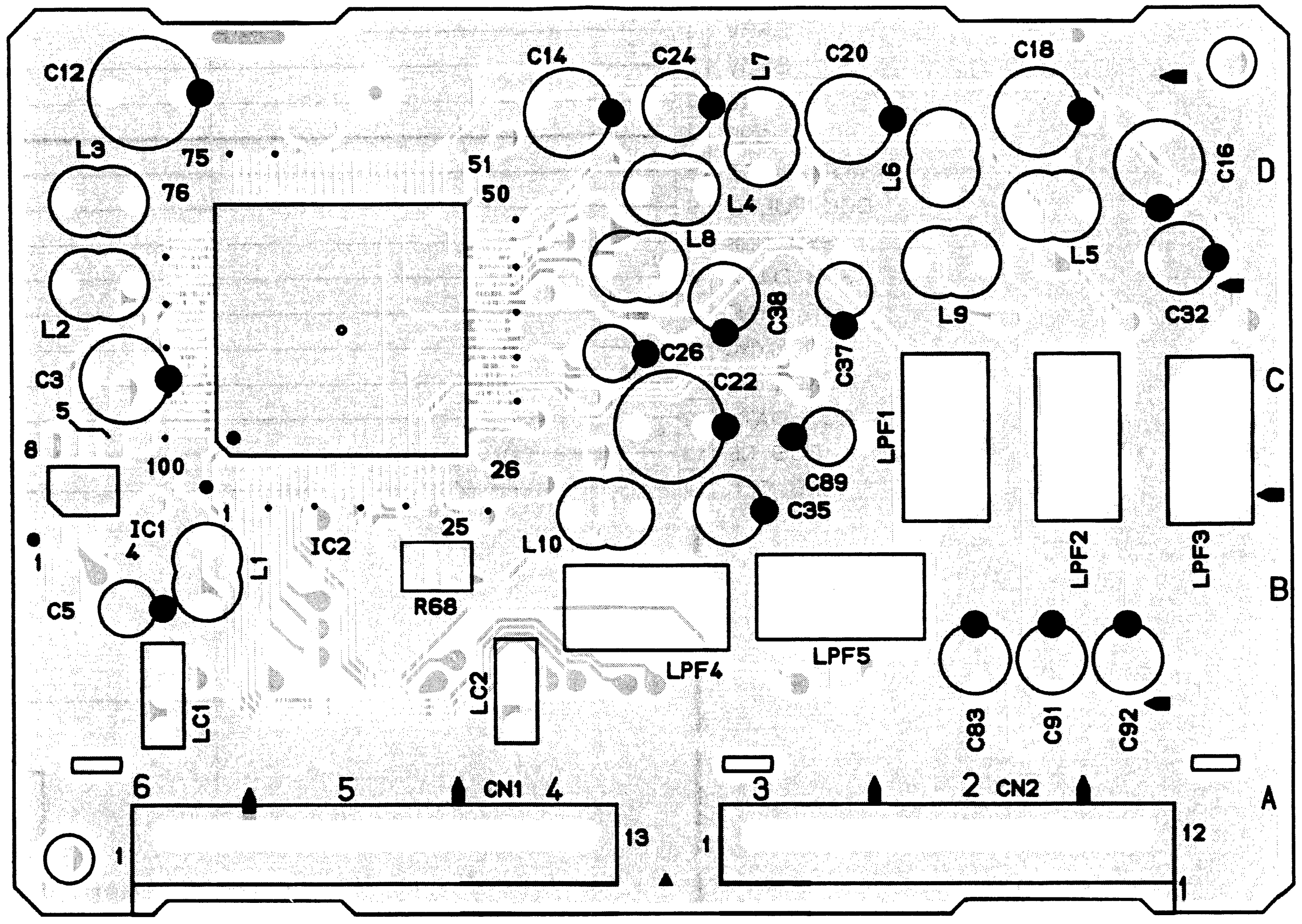
NOTE: For Y/C SEPA waveforms, please refer to page 4-52.

4.23 Y/C SEPA CIRCUIT BOARD

— FOIL SIDE —


Y/C SEPA PWB ASS'Y
A
8
9
UL MARK
CN1
CN2
PB20669
Y/C SEPA PWB
LPF1
LPF3
LPF4
LPF5
LC1
LC2
IC1
IC2
A
B
C
D
1
2
3
4
5
6
12
13

— COMPONENT SIDE —


C12
C14
C24
L7
C20
C18
C16
L3
75
76
51
50
L6
L4
L8
L5
L2
C3
C26
C22
C38
C37
L9
C32
LPF1
LPF2
LPF3
100
26
25
C89
C35
IC1
IC2
L1
R68
L10
C5
LPF4
LPF5
LC1
LC2
C83
C91
C92
CN1
CN2
A
B
C
D
1
2
3
4
5
6
12
13

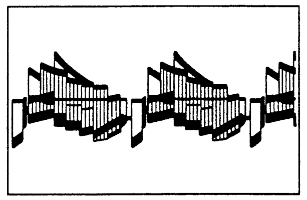
COMPONENT PARTS LOCATION GUIDE <Y/C SEPA>

REF.NO.	LOCATION		
CAPACITOR			
C1	B	C	6B
C2	B	C	6B
C3	A	D	6C
C4	B	C	6C
C5	A	D	6B
C6	B	C	6B
C7	B	C	6B
C8	B	C	6C
C9	B	C	6C
C10	B	C	6C
C11	B	C	6D
C12	A	D	6D
C13	B	C	4D
C14	A	D	4D
C15	B	C	4D
C16	A	D	1D
C17	B	C	1D
C18	A	D	2D
C19	B	C	2D
C20	A	D	3D
C21	B	C	3D
C22	A	D	4C
C23	B	C	2B
C24	A	D	4D
C25	B	C	4D
C26	A	D	4C
C27	B	C	5C
C28	B	C	5C
C29	B	C	4C
C30	B	C	5C
C31	B	C	5C
C32	A	D	1D
C33	B	C	1D
C34	B	C	5B
C35	A	D	3B
C36	B	C	3B
C37	A	D	3D
C38	A	D	3D
C39	B	C	5B
C40	B	C	1B
C41	B	C	1B
C42	B	C	2B
C43	B	C	4D
C44	B	C	4C
C45	B	C	6D
C46	B	C	4C
C47	B	C	3D
C48	B	C	4C
C49	B	C	6D
C50	B	C	2C
C51	B	C	2C
C56	B	C	5D
C57	B	C	5D
C58	B	C	5D
C59	B	C	5D
C60	B	C	5D
C61	B	C	5D
C62	B	C	6D
C63	B	C	6D
C64	B	C	4C
C65	B	C	3B
C66	B	C	3A
C67	B	C	4A
C68	B	C	4A
C69	B	C	5A
C70	B	C	5A
C71	B	C	5A
C72	B	C	5A
C73	B	C	5A
C74	B	C	6A
C75	B	C	1B
C76	B	C	1A
C77	B	C	2A
C78	B	C	2A
C79	B	C	2A
C80	B	C	3A
C81	B	C	3A
C82	B	C	2B
C83	A	D	2B
C84	B	C	4C
C86	B	C	1C
C87	B	C	3C
C88	B	C	3C
C89	A	D	3C
C91	A	D	2B
C92	A	D	1B
CONNECTOR			
CN1	A	D	4A
CN2	A	D	1A
DIODE			
D1	B	C	3D
IC			
IC1	A	C	6C
IC2	A	C	5C
COIL			
L1	A	D	6B
L2	A	D	6D
L3	A	D	6D
L4	A	D	3D
L5	A	D	1D
L6	A	D	2D
L7	A	D	3D
L8	A	D	3D
L9	A	D	2D
L10	A	D	4B
TRANSISTOR			
Q1	B	C	2C
Q2	B	C	2B
Q3	B	C	1C
Q4	B	C	1B
Q5	B	C	1C
Q6	B	C	1B
Q7	B	C	4B
Q8	B	C	4B
Q9	B	C	5B
Q10	B	C	3B
Q11	B	C	3C
Q12	B	C	2C
Q13	B	C	3D
Q14	B	C	3C
Q15	B	C	3D
RESISTOR			
R1	B	C	6B
R2	B	C	6B
R3	B	C	6B
R4	B	C	6C
R5	B	C	1D
R6	B	C	2D
R7	B	C	3D
R8	B	C	4C
R9	B	C	5C
R10	B	C	2C
R11	B	C	2C
R12	B	C	2B
R13	B	C	2B
R14	B	C	1C
R15	B	C	1C
R16	B	C	2B
R17	B	C	1B
R18	B	C	1C
R19	B	C	1C
R20	B	C	1B
R21	B	C	1B
R22	B	C	1B
R23	B	C	3B
R24	B	C	3B
R25	B	C	4B
R26	B	C	3B
R27	B	C	5B
R28	B	C	4B
R29	B	C	5B
R30	B	C	5B
R31	B	C	5B
R32	B	C	2B
R33	B	C	3B
R34	B	C	3B
R35	B	C	2C
R36	B	C	2C
R37	B	C	3C
R38	B	C	3C
R39	B	C	3C
R40	B	C	3C
R41	B	C	3D
R42	B	C	3C
R43	B	C	6A
R44	B	C	5A
R45	B	C	5A
R46	B	C	5A
R47	B	C	5A
R48	B	C	4A
R49	B	C	4A
R50	B	C	4A
R51	B	C	4A
R52	B	C	3A
R53	B	C	2B
R54	B	C	1D
R55	B	C	4D
R56	B	C	3D
R57	B	C	4D
R58	B	C	2B
R59	B	C	3A
R60	B	C	3A
R61	B	C	5B
R62	B	C	5B
R63	B	C	2C
R64	B	C	2C
R65	B	C	2C
R66	B	C	1D
R67	B	C	5C
R68	A	C	5B
R69	B	C	1C
R70	B	C	2C
R71	B	C	2C
OTHERS			
LC1	A	D	6A
LC2	A	D	4A
LPF1	A	D	2C
LPF2	A	D	2C
LPF3	A	D	1C
LPF4	A	D	3B
LPF5	A	D	2B

WAVEFORMS

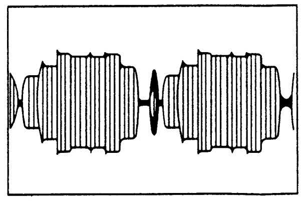
— Y/C SEPA —

WF1 IC2-24



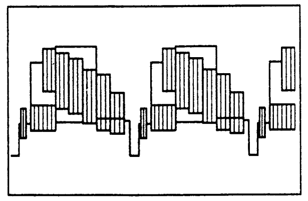
REC 1.4 Vp-p
50 mV/20 μsec/DIV

WF1 IC2-24



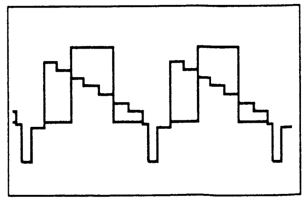
PB 1.0 Vp-p
50 mV/20 μsec/DIV

WF2 IC2-31



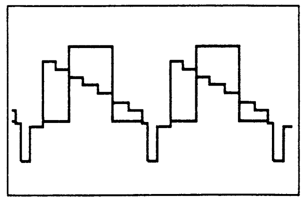
REC 1.5 Vp-p
50 mV/20 μsec/DIV

WF2 IC2-31



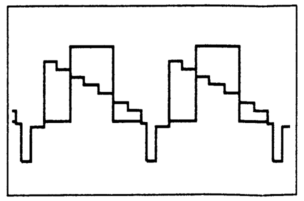
PB 1.5 Vp-p
50 mV/20 μsec/DIV

WF3 IC2-45



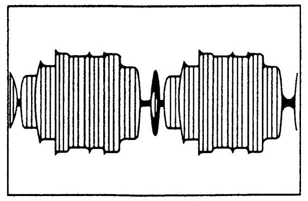
REC/PV 1.7 Vp-p
50 mV/20 μsec/DIV

WF4 IC2-49



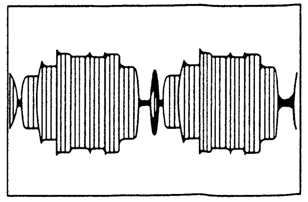
REC 1.7 Vp-p
50 mV/50 μsec/DIV

WF4 IC2-49



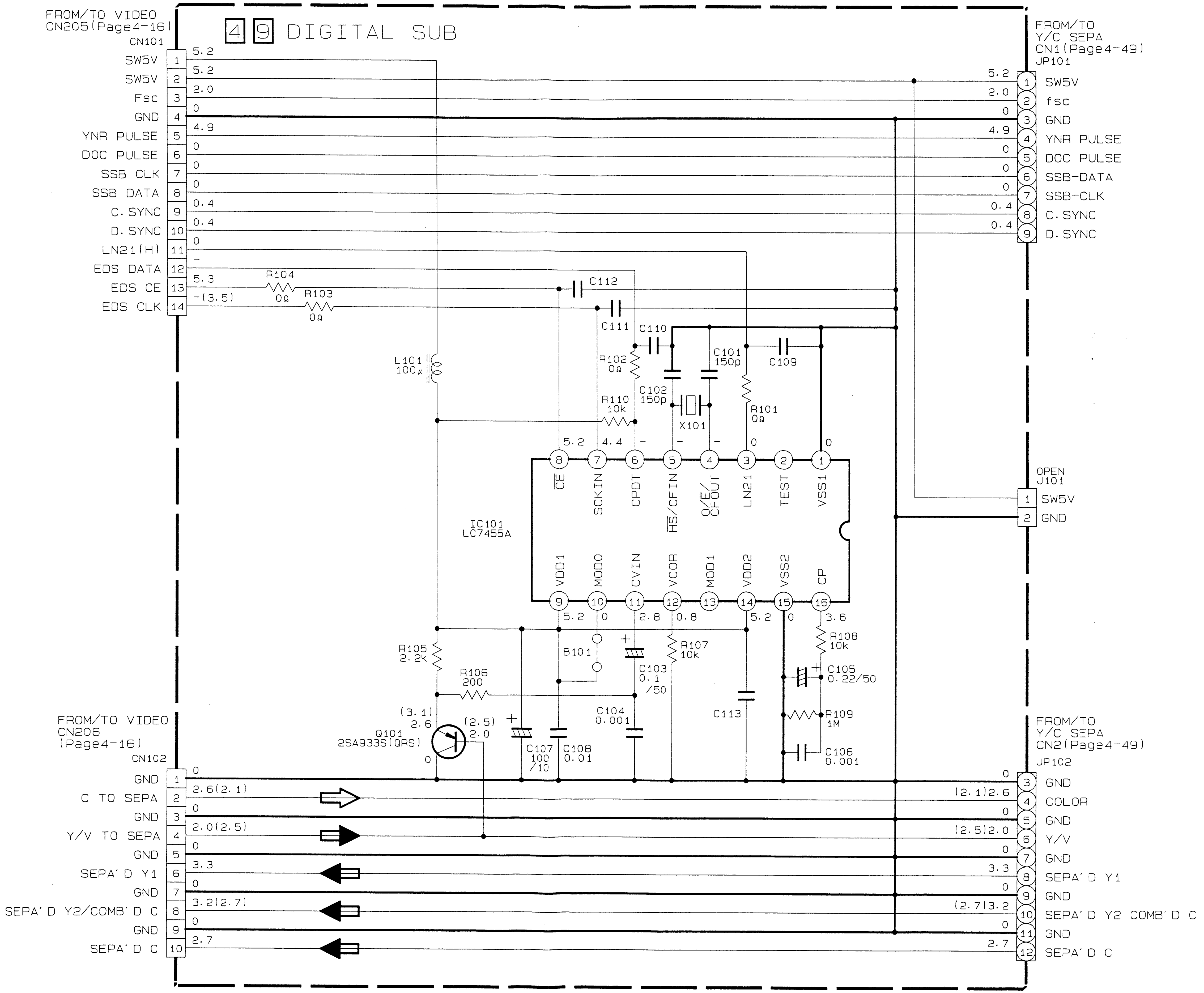
PB 1.0 Vp-p
50 mV/20 μsec/DIV

WF5 IC2-51

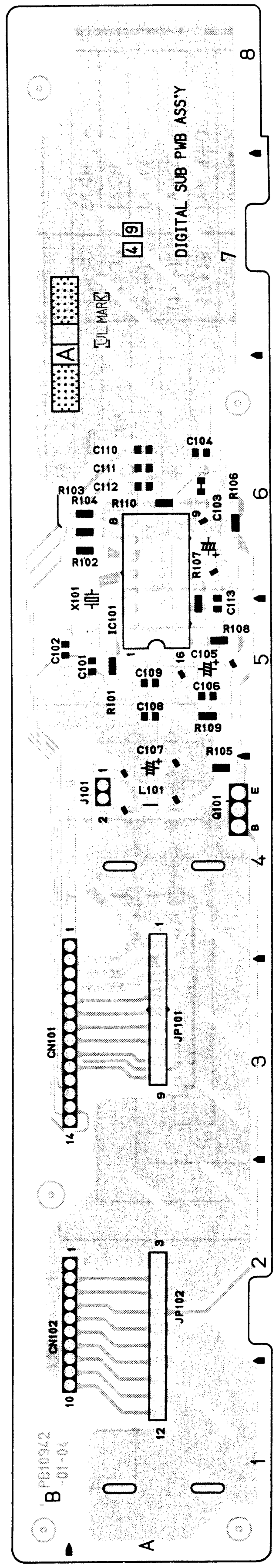


REC/PB 1.0 Vp-p
50 mV/20 μsec/DIV

4.24 DIGITAL SUB SCHEMATIC DIAGRAM

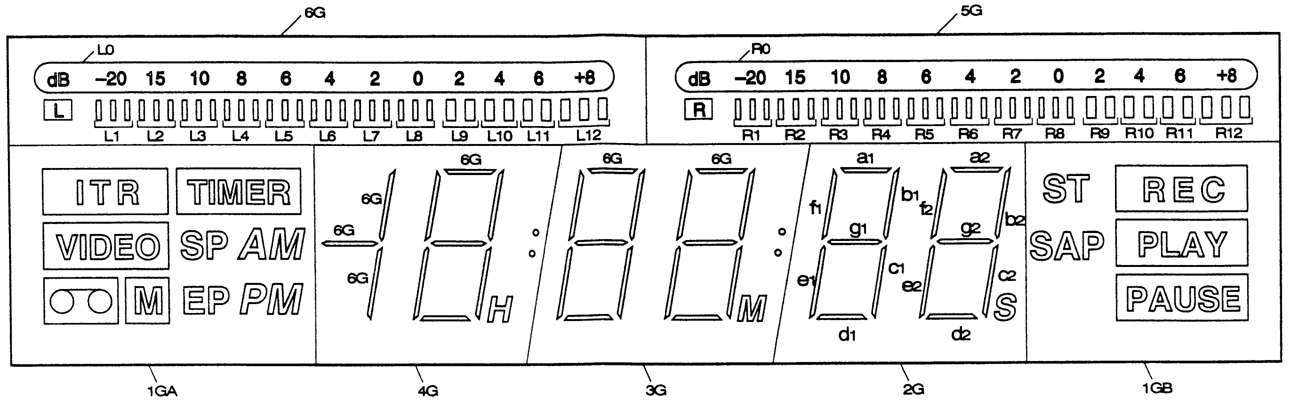

4 9 DIGITAL SUB
FROM/TO VIDEO
CN205(Page4-16)
CN101
1 SW5V 5.2
2 SW5V 5.2
3 Fsc 2.0
4 GND 0
5 YNR PULSE 4.9
6 DOC PULSE 0
7 SSB CLK 0
8 SSB DATA 0
9 C. SYNC 0.4
10 D. SYNC 0.4
11 LN21(H) 0
12 EDS DATA -
13 EDS CE 5.3
14 EDS CLK -(3.5)
R104 0Ω
R103 0Ω
FROM/TO
Y/C SEPA
CN1(Page4-49)
JP101
1 SW5V 5.2
2 fsc 2.0
3 GND 0
4 YNR PULSE 4.9
5 DOC PULSE 0
6 SSB-DATA 0
7 SSB-CLK 0
8 C. SYNC 0.4
9 D. SYNC 0.4
C112
C111
C110
C101 150p
C109
R102 0Ω
C102 150p
X101
R110 10k
R101 0Ω
L101 100μ
IC101
LC7455A
8 CE 5.2
7 SCKIN 4.4
6 CPDT -
5 HS/CFIN -
4 O/E/CFOUT -
3 LN21 0
2 TEST
1 VSS1 0
9 VDD1 5.2
10 MODO 0
11 CVIN 2.8
12 VCOR 0.8
13 MOD1
14 VDD2 5.2
15 VSS2 0
16 CP 3.6
OPEN
J101
1 SW5V
2 GND
R105 2.2K
B101
R106 200
R107 10k
C103 0.1 /50
C104 0.001
C113
R108 10k
C105 0.22/50
R109 1M
C106 0.001
Q101 2SA933S(QRS)
(3.1) 2.6
(2.5) 2.0
0
C107 100 /10
C108 0.01
FROM/TO VIDEO
CN206
(Page4-16)
CN102
1 GND 0
2 C TO SEPA 2.6(2.1)
3 GND 0
4 Y/V TO SEPA 2.0(2.5)
5 GND 0
6 SEPA'D Y1 3.3
7 GND 0
8 SEPA'D Y2/COMB'D C 3.2(2.7)
9 GND 0
10 SEPA'D C 2.7
FROM/TO
Y/C SEPA
CN2(Page4-49)
JP102
3 GND 0
4 COLOR (2.1)2.6
5 GND 0
6 Y/V (2.5)2.0
7 GND 0
8 SEPA'D Y1 3.3
9 GND 0
10 SEPA'D Y2 COMB'D C (2.7)3.2
11 GND 0
12 SEPA'D C 2.7
6 5 4 3 2 1
A B C D E F G H

4.25 DIGITAL SUB CIRCUIT BOARD


DIGITAL SUB PWB ASS'Y
A
4 9
L MARK
C104
C110
C111
C112
R103
R104
R110
R106
C103
R102
R107
X101
IC101
C113
R108
C102
C101
C109
C105
C106
R101
C108
R109
C107
R105
J101
L101
Q101
CN101
JP101
CN102
JP102
PB10342
B 01-04
1
2
3
4
5
6
7
8

4.26 FDP GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT


6G
5G
L0
R0
dB -20 15 10 8 6 4 2 0 2 4 6 +8
L
R
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12
ITR
TIMER
VIDEO
SP
AM
EP
PM
M
H
M
S
a1
a2
b1
b2
f1
f2
g1
g2
c1
c2
e1
e2
d1
d2
ST
SAP
REC
PLAY
PAUSE
1GA
4G
3G
2G
1GB

ANODE CONNECTION

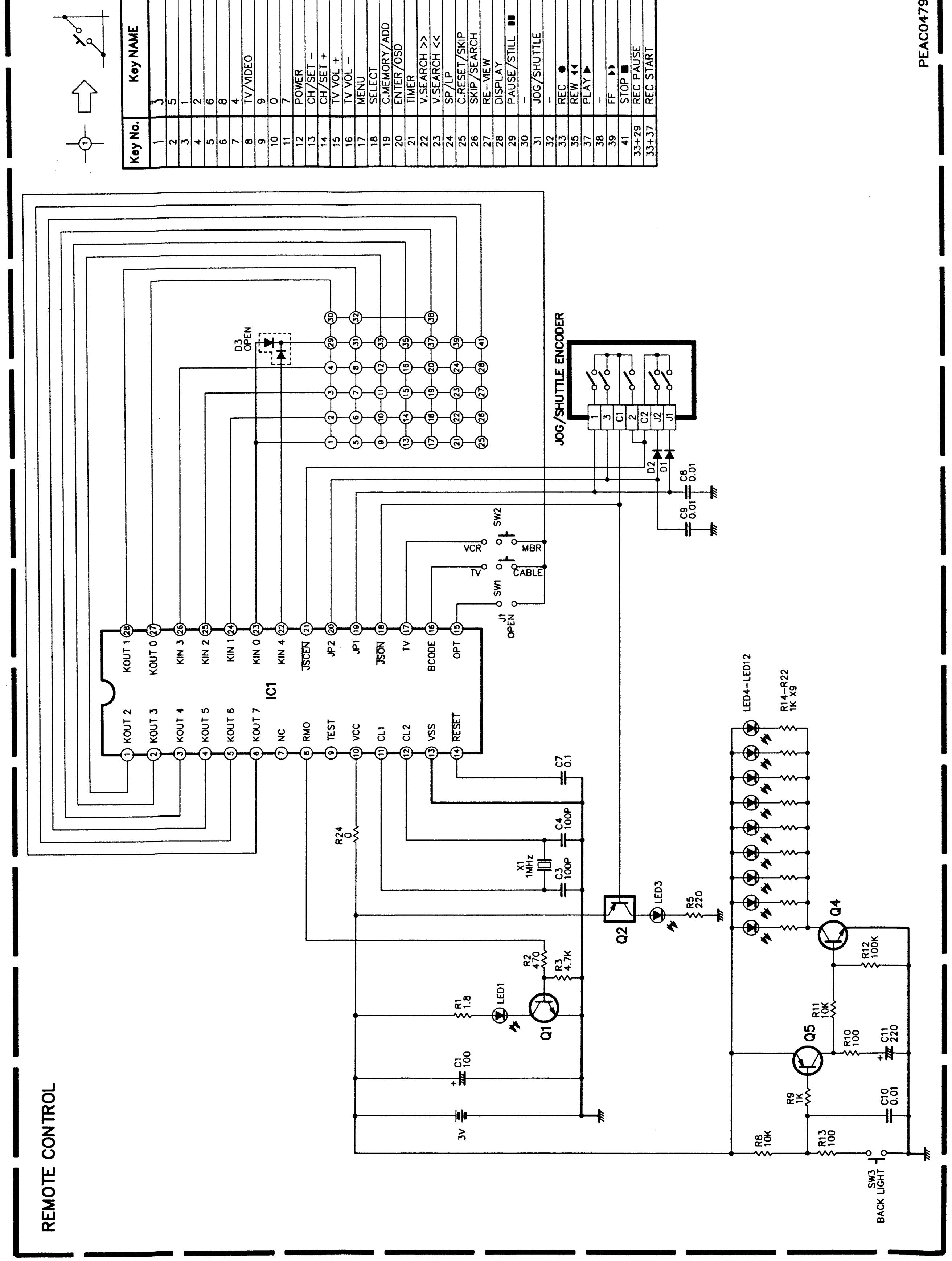
	6G	5G	4G	3G	2G	1G	
						IGA	1GB
P 1	L	R	a2	a2	a2	ITR	
P 2	L1	R1	b2	b2	b2	TIMER	
P 3	L2	R2	f2	f2	f2	VIDEO	
P 4	L3	R3	g2	g2	g2	AM	
P 5	L4	R4	c2	c2	c2	SP	
P 6	L5	R5	e2	e2	e2	EP	
P 7	L6	R6	d2	d2	d2	M	
P 8	L7	R7	:	:		OO	
P 9	L8	R8	H	M	S		ST
P10	L9	R9	b1, c1	a1	a1		REC
P11	L10	R10	g1	b1	b1		PLAY
P12	L11	R11		f1	f1		PAUSE
P13	L12	R12		g1	g1		SAP
P14	L0	R0		c1	c1	PM	
P15				e1	e1		
P16				d1	d1		

4.27 REMOTE CONTROL SCHEMATIC DIAGRAM

— for HR-S7300U —

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

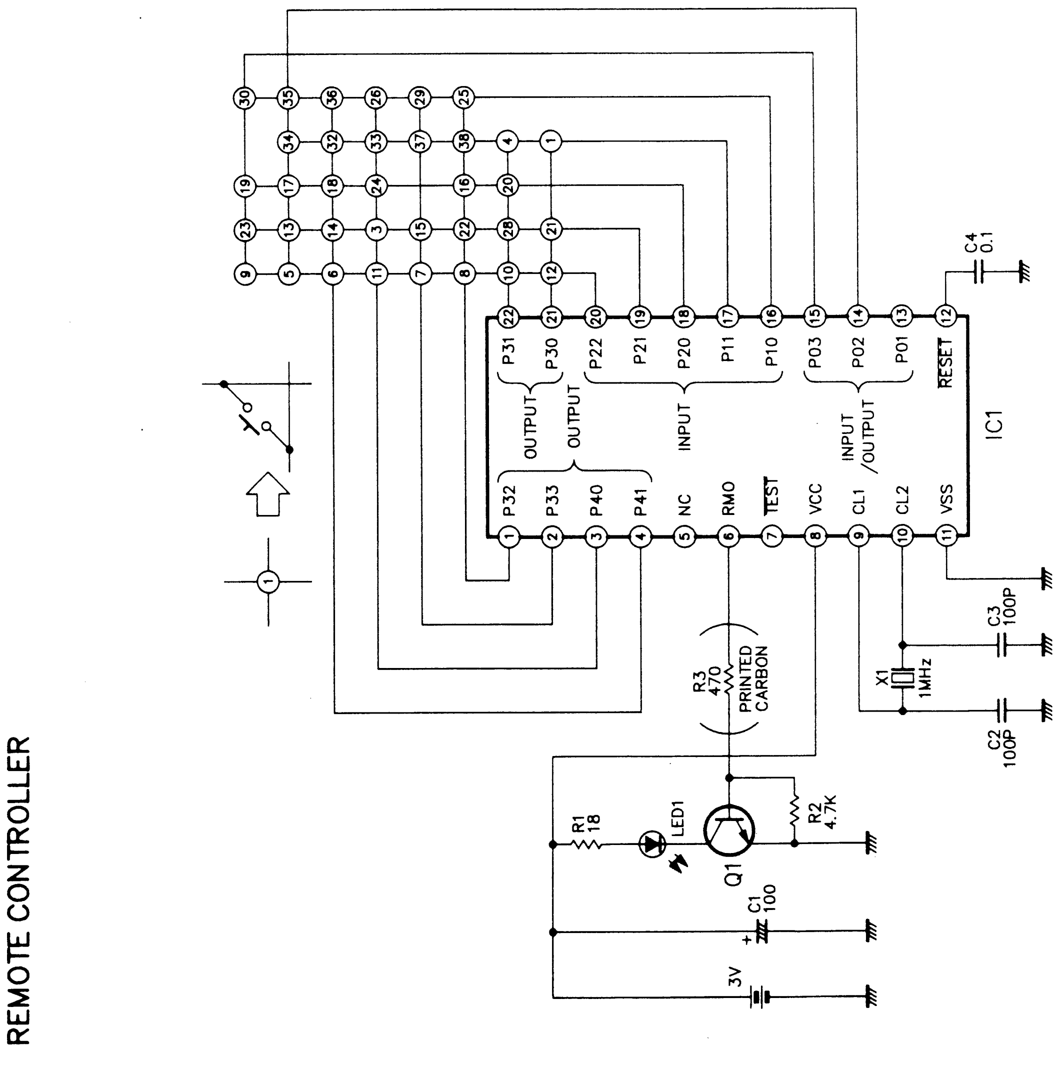
Key No.	Key NAME
1	3
2	5
3	1
4	2
5	6
6	8
7	4
8	TV/VIDEO
9	9
10	0
11	7
12	POWER
13	CH/SET −
14	CH/SET +
15	TV VOL +
16	TV VOL −
17	MENU
18	SELECT
19	C.MEMORY/ADD
20	ENTER/OSD
21	TIMER
22	V.SEARCH >>
23	V.SEARCH <<
24	SP/LP
25	C.RESET/SKIP
26	SKIP/SEARCH
27	RE−VIEW
28	DISPLAY
29	PAUSE/STILL ▮▮
30	−
31	JOG/SHUTTLE
32	−
33	REC ●
35	REW ◀◀
37	PLAY ▶
38	−
39	FF ▶▶
41	STOP ■
33+29	REC PAUSE
33+37	REC START


PEAC0479
D3 OPEN
JOG/SHUTTLE ENCODER
D2
D1
C8 0.01
C9 0.01
SW2
VCR
MBR
TV
CABLE
SW1
J1 OPEN
KOUT 1 28
KOUT 0 27
KIN 3 26
KIN 2 25
KIN 1 24
KIN 0 23
KIN 4 22
JSCEN 21
JP2 20
JP1 19
JSON 18
TV 17
BCODE 16
OPT 15
IC1
1 KOUT 2
2 KOUT 3
3 KOUT 4
4 KOUT 5
5 KOUT 6
6 KOUT 7
7 NC
8 RMO
9 TEST
10 VCC
11 CL1
12 CL2
13 VSS
14 RESET
C7 0.1
C4 100P
X1 1MHz
C3 100P
R24 0
LED4–LED12
R14–R22 1K X9
Q2
LED3
R5 220
Q4
R12 100K
R2 470
R3 4.7K
R1 1.8
LED1
Q1
C1 100
3V
R11 10K
Q5
R10 100
C11 220
R9 1K
C10 0.01
R8 10K
R13 100
SW3 BACK LIGHT
REMOTE CONTROL

— for HR-S5300U —

NOTE:
1. **All parts shown in this schematic are critical for safety.**
2. **This schematic is only for reference.**
Avoid replacing individual parts.
Replace the entire unit only.

Key No.	Key Name	Key No.	Key Name
1	ONE PRESS INDEX	31	——
2	——	32	PAUSE
3	TIMER	33	MENU
4	POWER	34	SELECT
5	1	35	C MEMORY
6	2	36	CANCEL
7	3	37	CH −
8	4	38	CH +
9	5	29+26	REC PLAY
10	6	29+32	REC PAUSE
11	7	17+4	TV POWER
12	8	17+18	TV/VIDEO
13	9	(17+)21	TV VOL −
14	0	(17+)22	TV VOL +
15	DISPLAY	17+37	TV CH −
16	ENTER	17+38	TV CH +
17	TV		
18	TV/VIDEO		
19	SP/EP		
20	SKIP		
21	TV VOL −		
22	TV VOL +		
23	SEARCH ❮		
24	SEARCH ❯		
25	REW		
26	PLAY		
27	——		
28	FF		
29	REC		
30	STOP		

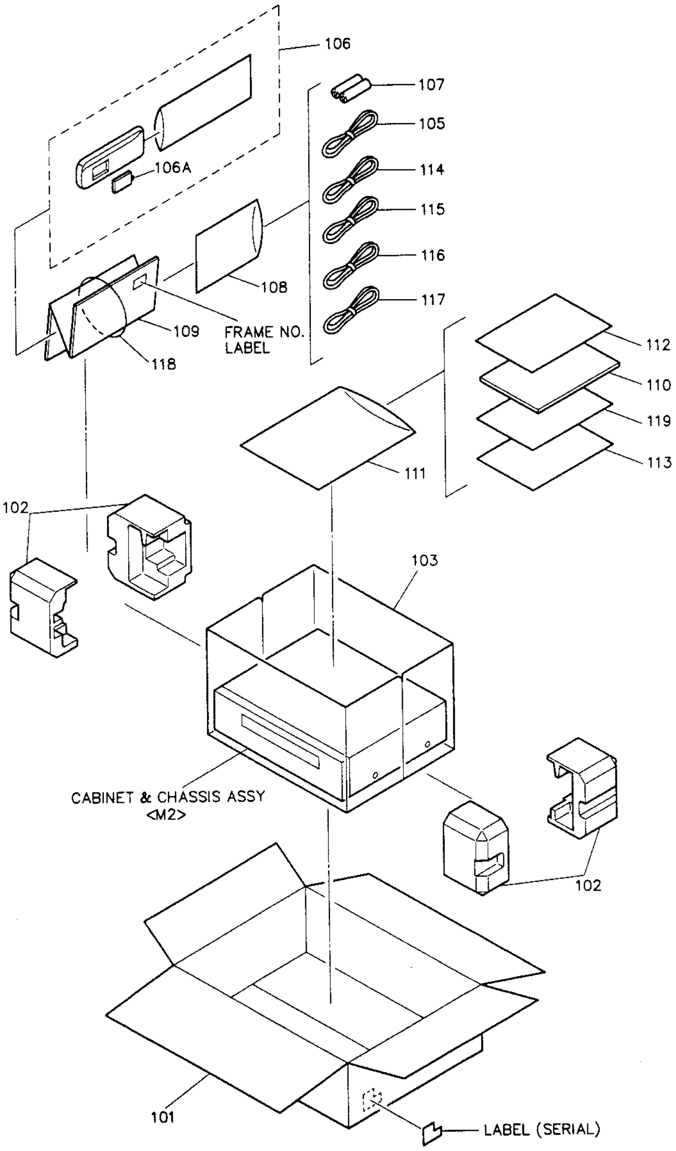

P31 22
P30 21
P22 20
P21 19
P20 18
P11 17
P10 16
P03 15
P02 14
P01 13
RESET 12
OUTPUT
OUTPUT
INPUT
INPUT /OUTPUT
IC1
1 P32
2 P33
3 P40
4 P41
5 NC
6 RMO
7 TEST
8 VCC
9 CL1
10 CL2
11 VSS
C4 0.1
C3 100P
X1 1MHz
C2 100P
R3 470 PRINTED CARBON
R1 18
LED1
Q1
R2 4.7K
C1 100
3V
REMOTE CONTROLLER

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING AND ACCESSORY ASSEMBLY <M1>


106
107
105
106A
114
115
116
108
117
FRAME NO. LABEL
109
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112
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111
102
103
CABINET & CHASSIS ASSY <M2>
102
101
LABEL (SERIAL)

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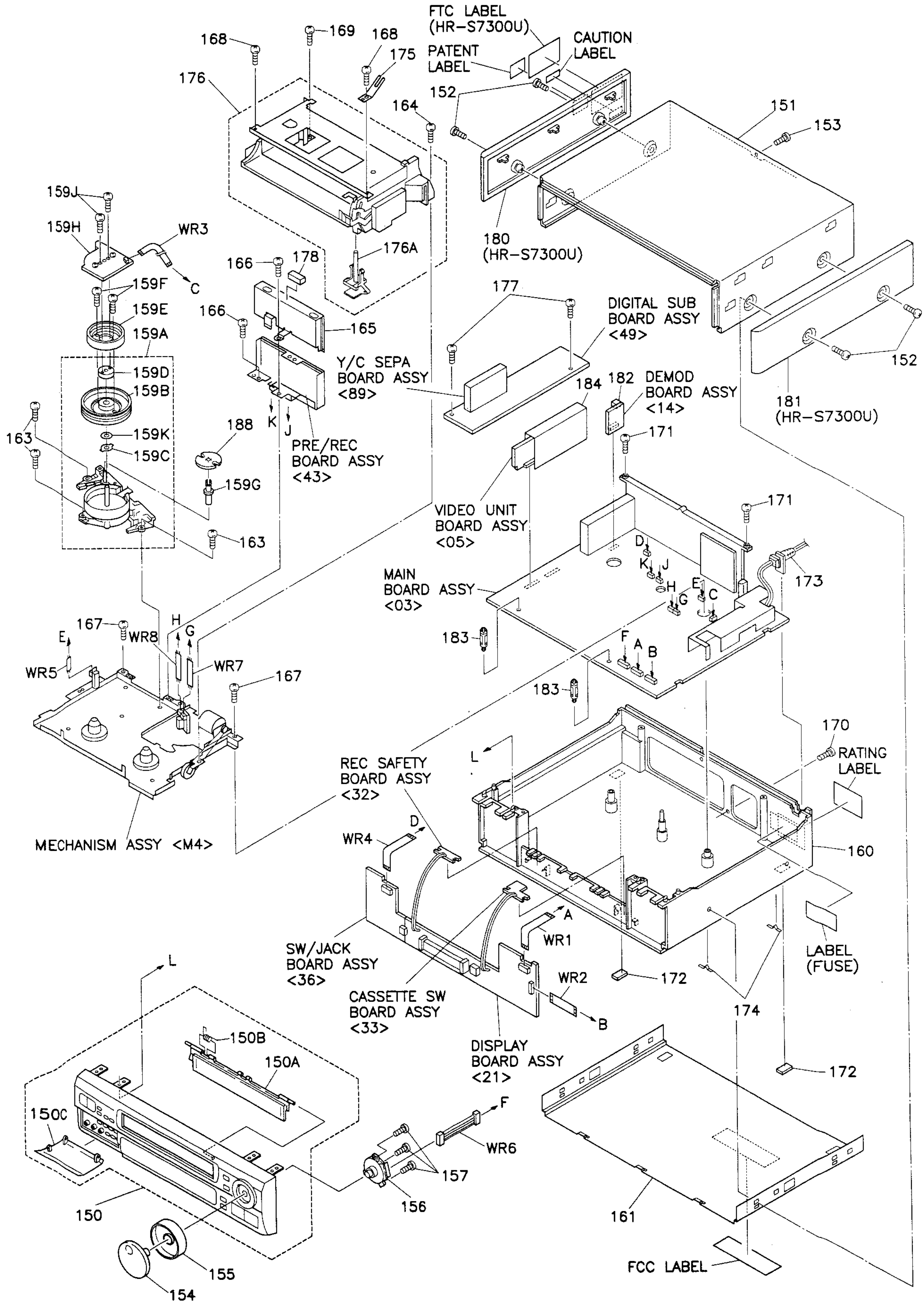
PACKING AND ACCESSORY ASSEMBLY <M1>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	101	PQ35407-2	PACKING CASE,S5300U
		PQ35408-2	PACKING CASE,S7300U
	102	PQ35413A	CUSHION ASSEMBLY
	103	PQM30021-93	POLY(FOAM)BAG,S5300U
		PQM30021-95	POLY(FOAM)BAG,S7300U
	105	PEAC0294-04	RF CABLE
⚠	106	PQ11525X	REMOTE CONTROLLER,S7300U
⚠		PQ21760N	REMOTE CONTROLLER,S5300U
	106A	PQ46034	CAP(BATTERY),S7300U
		PQ46505	BATTERY COVER,S5300U
	107	PECA0786	BATTERY,X2 S5300U
		R6PRPA-2ST	BATTERY,X2 S7300U
	108	PQ35364-2	POLY BAG
	109	PQ35274-1-1	SHEET,ACCESSORY
⚠	110	PU30425-1826	INSTRUCTIONS,S5300U
⚠		PU30425-1827	INSTRUCTIONS,S7300U
	111	PQ35364-5	POLY BAG
	112	BT-51006-1	REGIST.CARD
	113	PU36627	Q.CARD
⚠	114	PEAC0370	CABLE BOX CONTROLLER
	115	PEAC0359-120	A/V CABLE
	116	PU60111	S-VIDEO CABLE
	117	PEAC0368-150	MINI-PLUG CABLE
	118	PQ46504	RUBBER BAND
	119	PU36629-16	Q.START SHEET S5300U
		PU36629-17	Q.START SHEET S7300U

5.2 CABINET AND CHASSIS ASSEMBLY <M2>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

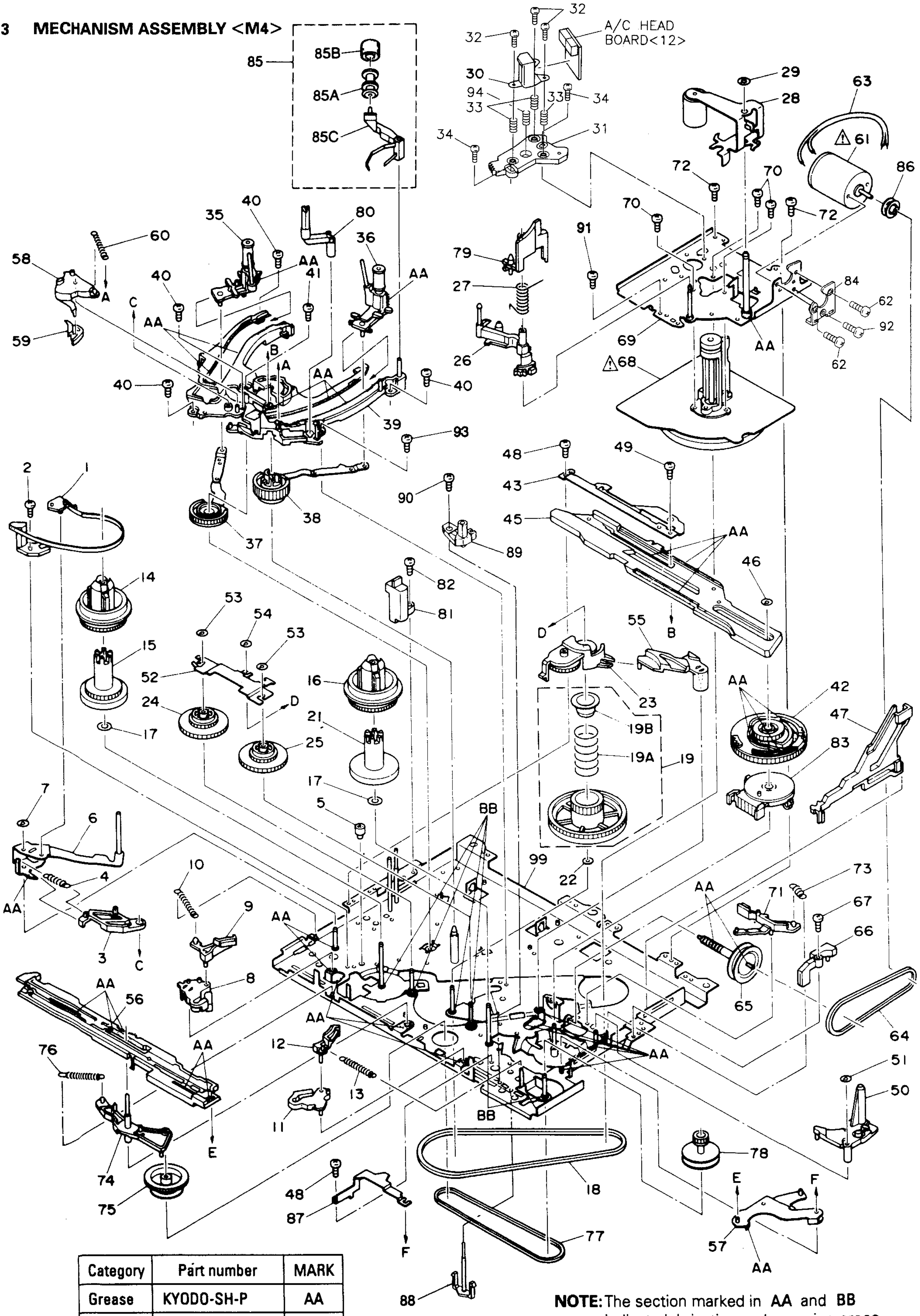

168
169
168
175
FTC LABEL (HR-S7300U)
PATENT LABEL
CAUTION LABEL
176
152
164
151
153
159J
159H
WR3
C
176A
180 (HR-S7300U)
166
178
159F
159E
159A
166
165
177
DIGITAL SUB BOARD ASSY <49>
159D
159B
Y/C SEPA BOARD ASSY <89>
152
184
182
DEMOD BOARD ASSY <14>
181 (HR-S7300U)
163
159K
159C
188
K
J
PRE/REC BOARD ASSY <43>
171
159G
171
VIDEO UNIT BOARD ASSY <05>
163
D
K
J
MAIN BOARD ASSY <03>
H
G
E
C
173
183
167
E
WR8
H
G
WR5
WR7
167
F
A
B
183
170
RATING LABEL
REC SAFETY BOARD ASSY <32>
L
MECHANISM ASSY <M4>
WR4
D
160
A
WR1
SW/JACK BOARD ASSY <36>
LABEL (FUSE)
L
172
CASSETTE SW BOARD ASSY <33>
WR2
B
174
150B
DISPLAY BOARD ASSY <21>
150A
172
150C
F
WR6
157
150
156
161
155
FCC LABEL
154

****

CABINET AND CHASSIS ASSEMBLY <M2>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	150	PQ11802AJ	FRONT PANEL ASSEMBLY,S5300U
		PQ11802AK	FRONT PANEL ASSEMBLY,S7300U
	150A	PQ21818-26	CASSETTE DOOR,S5300U
		PQ21818-27	CASSETTE DOOR,S7300U
	150B	PQ46448	TORSION SPRING
	150C	PQ21822-25	DOOR,S5300U
		PQ21822-26	DOOR,S7300U
⚠	151	PQ11676-14	TOP COVER,S7300U
⚠		PQ11676-27	TOP COVER,S5300U
	152	PQ43930	SPECIAL SCREW,X4 TOP COVER S7300U
		SDSF3010M	SCREW,X4 TOP COVER S5300U
	153	SDSF3010M	SCREW,TOP COVER
	154	PQ35247	KNOB(JOG)
	155	PQ35295-2	KNOB(SHUTTLE),S7300U
		PQ35295-5	KNOB(SHUTTLE),S5300U
	156	PEME0757-03	JOG SHUTTLE ASSEMBLY
	157	SDSF2608Z	SCREW,X3 JOG
	159A	PDM2261V	DRUM SUB ASSY,S5300U
		PDM2261Y	DRUM SUB ASSY,S7300U
	159B	PDM3353AB	UPPER DRUM ASSY,S7300U
		PDM3353AQ	UPPER DRUM ASSY,S5300U
	159C	PDM4400C-3	BRUSH ASSEMBLY
	159D	PDM4345A	COLLAR ASSEMBLY
	159E	PDZ0141-2	ROTOR ASSEMBLY
	159F	SPSH2660Z	SCREW,X2
	159G	PDM4311A-1	ROLLER ASSEMBLY
⚠	159H	PDZ0141-1-2	STATOR ASSEMBLY
	159J	SPSP2606Z	SCREW,X2
	159K	PDM4050-9	WASHER
⚠	160	PQ11666-5-14	BOTTOM CHASSIS
⚠	161	PQ11668-2	BOTTOM COVER
	163	SPST2608Z	SCREW,X3 DRUM
	164	SPST2606Z	SCREW,CASS HOUSING ASSEMBLY
	165	PQ21806-1-2	SHIELD CASE,PRE
	166	SDST2606Z	SCREW,X2 PRE
	167	SDSF4012Z	SCREW,X2 MECH
	168	SDSF3010Z	SCREW,X2 CASS HOUSING ASSY
	169	SDST2610Z	SCREW,CASS HOUSING ASSEMBLY
	170	SDSF3010M	SCREW,TERMINAL
	171	SDSF3010Z	SCREW,X2 TERMINAL
	172	PQ43013-5	FOOT,X2
⚠	173	QMP14K0-170	POWER CORD
⚠	174	PQ46412-2	EARTH SPRING,X2
	175	PQ41556	EARTH PLATE
	176	PUS29724D	CASSETTE HOUSING ASSEMBLY
	176A	PQ46359	CASSETTE SWITCH PIN
	177	SDSF3010Z	SCREW,X2 DIGI SUB
	178	PQM30029-235	SPACER,SHIELD CASE
	180	PQ11842	SIDE PANEL(L),S7300U
	181	PQ11843	SIDE PANEL(R),S7300U
	182	PQM30029-250	SPACER,DEMOD
	183	PEME0947-01-01	SPACER,X2 MECH
	184	PQ35425	COVER(SHIELD),TUNER
	188	PQ44230	INERTIA PLATE,MECH
	WR1	PW30802-0814	WIRE,DISPLAY CN5
	WR2	PW30802-0515	WIRE,DISPLAY CN3
	WR3	PW30803-0422	WIRE,DRUM
	WR4	PW30802-0636	WIRE,SW/JACK CN1
	WR5	PW30701-36AAYY	WIRE,CN101 FE HEAD
	WR6	PW30202-0772018	WIRE,JOG
	WR7	PW30705-12AAYY	WIRE,CN102 R/P A ERASEHEAD
	WR8	PW30702-12AAYY	WIRE,CN401 AUDIO CTL HEAD

5.3 MECHANISM ASSEMBLY <M4>


85
85B
85A
85C
32
32
A/C HEAD BOARD<12>
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94
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⚠61
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84
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92
62
69
AA
⚠68
91
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58
A
AA
41
AA
40
C
AA
59
B
A
AA
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40
39
93
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1
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38
90
89
48
43
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45
AA
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81
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D
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D
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B
23
19B
19A
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AA
42
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83
7
6
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AA
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C
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9
8
AA
56
AA
BB
99
22
73
AA
71
67
66
65
64
76
AA
12
13
11
E
74
75
BB
AA
51
50
78
18
48
87
F
E
F
57
AA
77
88

Category	Part number	MARK
Grease	KYODO-SH-P	AA
Oil	COSMO-HV56	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

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MECHANISM ASSEMBLY <M4>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PQ46298A-5	TENSION BAND ASSEMBLY
2	SDST2608Z	SCREW
3	PQ35012-1-3	TENSION ARM LEVER
4	PQM30001-385109	TENSION SPRING
5	PQ46302-1-3	ADJUST PIN
6	PQ46303B-7	TENSION ARM ASSEMBLY
7	PQM30017-47	SLIT WASHER
8	PQ46305B-3	MAIN BRAKE ASSEMBLY(SUPPLY)
9	PQ46306A-3	SUB BRAKE ASSEMBLY(SUPPLY)
10	PQM30001-393	TENSION SPRING
11	PQ46308A-5	MAIN BRAKE ASSEMBLY(TAKE UP)
12	PQ46309A-4	SUB BRAKE ASSEMBLY(TAKE UP)
13	PQM30001-389102	TENSION SPRING
14	PQ46535A-1	REEL DISK ASSEMBLY(SUPPLY)
15	PQ35014-1-1	SLIT DISK(SUPPLY)
16	PQ21683-2-11	REEL DISK(TAKE UP)
17	PQM30018-69	SPACER,X2
18	PQM30003-38	BELT(CAPSTAN)
19	PQ46497B-2	PULLEY ASSEMBLY
19A	PQM30002-233	COMPRESSION SPRING
19B	PQ46311	SPRING CAP
21	PQ35015-1-1	SLIT DISK(TAKE UP)
22	PQM30018-69	SPACER
23	PQ46312B-9	IDLER ARM ASSEMBLY
24	PQ46316A-1	CLUTCH UNIT(SUPPLY)
25	PQ46323A-1	CLUTCH UNIT(TAKE UP)
26	PQ46325B-9	GUIDE ARM ASSEMBLY
27	PQ46326-2	TORSION SPRING
28	PQ46327A-2	PINCH ROLLER ARM ASSEMBLY
29	PQM30017-24	SLIT WASHER
30	PEHE0182	AUDIO CONTROL HEAD
31	PQ35481	HEAD BASE
32	SPST2608Z	SCREW,X3
33	PQM30002-192	COMPRESSION SPRING,X3
34	SDSP2606Z	SCREW,X2
35	PQ46330A-3	POLE BASE ASSEMBLY(SUPPLY)
36	PQ46331A-1	POLE BASE ASSEMBLY(TAKE UP)
37	PQ46332A-3	LOADING ARM ASSEMBLY(SUPPLY)
38	PQ46337A-6	LOADING ARM ASSEMBLY(TAKE UP)
39	PQ11657-1-9	GUIDE RAIL
40	SPST2608Z	SCREW,X4
41	SDST2612Z	SCREW
42	PQ21684-1-3	CONTROL CAM
43	PQ35138-1-2	CONTROL BRACKET
45	PQ11658-1-14	CONTROL PLATE
46	PQM30017-8	SLIT WASHER
47	PQ21685-2-9	PINCH PLATE
48	SPST2606Z	SCREW,X2
49	SPSF2608M	SCREW
50	PQ46342B-10	LEVER ASSEMBLY
51	PQM30017-8	SLIT WASHER
52	PQ35083-1-8	REEL BRACKET
53	PQM30017-51	SLIT WASHER,X2
54	Q03093-830	WASHER
55	PQ35026-1-7	IDLER LEVER
56	PQ11659-1-11	SLIDE PLATE
57	PQ46344A-2	CHANGE LEVER ASSEMBLY
58	PQ21686-1-3	TAKE UP LEVER ASSEMBLY
59	PQ46345-1-2	TAKE UP HEAD
60	PQM30001-387106	TENSION SPRING
⚠ 61	PU60628-4	LOADING MOTOR
62	SPSP3005Z	SCREW,X2
63	PW30101-80AJ632	WIRE
64	PQM30003-39	BELT
65	PQ46395A	WORM GEAR ASSEMBLY
66	PQ21699	WORM BEARING
67	SPST2606Z	SCREW
⚠ 68	PU61435-1-6	CAPSTAN MOTOR
69	PQ46347E-14	SUB DECK ASSEMBLY
70	SPSG2608Z	SCREW,X3
71	PQ46356C-3	CAPSTAN BRAKE ASSEMBLY
72	SDST2608Z	SCREW,X2
73	PQM30001-384101	TENSION SPRING
74	PQ46353A-2	CHANGE ARM ASSEMBLY
75	PQ46354	CHANGE GEAR
76	PQM30001-386	TENSION SPRING
77	PQM30003-40	BELT
78	PQ46355	CASSETTE GEAR
79	PQ35030-1-5	LID GUIDE
80	PQ21689-2	LED PRISM
81	PEHE0237	FULL ERASE HEAD
82	SDST2610Z	SCREW
83	PU61432-1-1	ROTARY ENCODER
84	PQ46568-1-2	MOTER GUIDE
85	PQ46436A-1	CLEANER ASSEMBLY
85A	PQ46418-1-2	CLEANER ROLLER
85B	PQ46419-1-2	CLEANER
85C	PQ35159-1-1	CLEANER ARM
86	PQ43546-1-2	MOTOR PULLEY
87	PQ35217-1-2	CTL BRACKET 2
88	PQ46473-1-1	S-SW PIN
89	PQ46474-1-2	S-SW HOLDER
90	SPST2606Z	SCREW
91	SDSP2604Z	SCREW
92	SDSP2604Z	SCREW
93	SDST2608Z	SCREW
94	PQ46630	COMPRESSION SPRING
99	PQ21680D-18	MAIN DECK ASSEMBLY

5.4 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <03>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PW1	PB10990A-01	MAIN BOARD ASSEMBLY,S5300U
		PB10990B-01	MAIN BOARD ASSEMBLY,S7300U
	IC1	JCP0056	IC
	IC2	AN3969K	IC
	IC3	BA6138	IC
⚠	IC101	XLA7795LS	IC
⚠		or BA7795LS	IC
	IC301	UPD6459CS-501	IC (OSD)
		or UPD6459ACS-501	IC (OSD)
	IC351	MM1117XS	IC
	IC352	BA7623F	IC
	IC401	BU2881BS	IC
	IC451	BA7039	IC
		or XRA7039	IC
	IC501	S-1460BF-B38	SOP IC (MCU)
		or S-1460BF-B38-W	SOP IC (MCU)
		or S-14P60AF-B38	SOP IC (MCU)
	IC601	HD6433928TA55F	QFP IC (MCU)
	IC602	XL93LC56AP	IC
		or AT93C56-10PC	IC
		or 93LC56/P	IC
		or 93LC56B/P	IC
	IC603	S-80728AN-Z	IC
		or RE5VL28A	IC
	IC604	TA7291S	IC
	IC607	M50253P	IC
		or BU2090	IC
	IC608	M66007P	IC
	IC610	TC4W66F	IC
	IC751	M37470M3-054SP	IC
	Q51	2SD1450S,T	TRANSISTOR
	Q52	2SC3311A(RS)	TRANSISTOR
	Q101	DTC114EU	TRANSISTOR
	Q131	2SC4081(RS)	TRANSISTOR
	Q132	2SA933S(RS)	TRANSISTOR
	Q133	2SA933S(RS)	TRANSISTOR
	Q134	2SC4081(RS)	TRANSISTOR
	Q135	2SA933S(RS)	TRANSISTOR
	Q201	2SC4081(QRS)	TRANSISTOR
	Q202	2SA1576(QRS)	TRANSISTOR
	Q203	2SC4081(QRS)	TRANSISTOR
	Q221	2SC4081(QRS)	TRANSISTOR
	Q222	2SC4081(QRS)	TRANSISTOR
	Q223	2SC4081(QRS)	TRANSISTOR
	Q241	DTC144EU	TRANSISTOR
	Q242	2SC4081(QRS)	TRANSISTOR
	Q243	2SC4081(QRS)	TRANSISTOR
	Q261	DTC144EU	TRANSISTOR
	Q262	DTC124EU	TRANSISTOR
	Q263	DTC124EU	TRANSISTOR
	Q264	DTC124EU	TRANSISTOR
	Q281	DTC124EU	TRANSISTOR
	Q282	DTA124EU	TRANSISTOR
	Q301	2SA1576(QRS)	TRANSISTOR
	Q302	2SC4081(QRS)	TRANSISTOR
	Q351	2SA1576(QRS)	TRANSISTOR
	Q352	2SC4081(QRS)	TRANSISTOR
	Q401	DTC114EU	TRANSISTOR
	Q501	2SB1256	TRANSISTOR
	Q601	2SC4081(QRS)	TRANSISTOR
	Q602	PN268VI	PH TRANSISTOR
	Q603	PN268VI	PH TRANSISTOR
	Q605	DTC124EU	TRANSISTOR
	Q606	DTC143EU	TRANSISTOR
	Q607	DTC124EU	TRANSISTOR
	Q608	DTC124EU	TRANSISTOR
	Q609	DTC124EU	TRANSISTOR
	Q801	2SK1445-CB14	FE TRANSISTOR
		or 2SK1976-F44	FE TRANSISTOR
		or 2SK2123-LT	FE TRANSISTOR
	Q802	2SC3616(ML)	TRANSISTOR
	Q851	2SC1740S(RS)	TRANSISTOR
	Q881	2SC3616(MLK)	TRANSISTOR
	Q882	2SD1913(RS)	TRANSISTOR
	Q883	2SC4081(R)	TRANSISTOR
	Q884	DTA114EU	TRANSISTOR
	Q885	DTC143TU	TRANSISTOR
	Q886	2SB1256	TRANSISTOR
	Q1001	2SC3243D,E	TRANSISTOR
	Q1021	DTC144EU	TRANSISTOR
	Q1022	2SC4081(RS)	TRANSISTOR
	Q1023	2SC4081(RS)	TRANSISTOR
	Q1024	2SA1576(RS)	TRANSISTOR
	Q1025	2SC4081(RS)	TRANSISTOR
	D1	DAP202U	DIODE
	D101	RD6.2ES-T1B2	ZENER DIODE
	D102	DAP202U	DIODE
	D262	1SS133	DIODE
		or MA165	DIODE
		or 1N4148M	DIODE
	D264	1SS133	DIODE
		or 1N4148M	DIODE
		or MA165	DIODE
	D283	1SS133	DIODE
		or 1N4148M	DIODE
		or MA165	DIODE
	D451	1SS133	DIODE
		or MA165	DIODE
		or 1N4148M	DIODE
	D601	11ES2	DIODE
	D602	11ES2	DIODE
	D603	RD9.1ES-T1B2	ZENER DIODE
	D606	1SS133	DIODE
		or MA165	DIODE
		or 1N4148M	DIODE
	D607	1SS133	DIODE
		or 1N4148M	DIODE
		or MA165	DIODE
	D608	1SS133	DIODE
		or 1N4148M	DIODE
		or MA165	DIODE
	D609	SIR-381SB3FM	LE DIODE
		or SIR-381SB3FX1M	LE DIODE
	D612	1SS133	DIODE
		or 1N4148M	DIODE
		or MA165	DIODE
	D613	1SS133	DIODE
		or MA165	DIODE
		or 1N4148M	DIODE

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MECHANISM ASSEMBLY <M4>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	PQ46298A-5	TENSION BAND ASSEMBLY
	2	SDST2608Z	SCREW
	3	PQ35012-1-3	TENSION ARM LEVER
	4	PQM30001-385109	TENSION SPRING
	5	PQ46302-1-3	ADJUST PIN
	6	PQ46303B-7	TENSION ARM ASSEMBLY
	7	PQM30017-47	SLIT WASHER
	8	PQ46305B-3	MAIN BRAKE ASSEMBLY(SUPPLY)
	9	PQ46306A-3	SUB BRAKE ASSEMBLY(SUPPLY)
	10	PQM30001-393	TENSION SPRING
	11	PQ46308A-5	MAIN BRAKE ASSEMBLY(TAKE UP)
	12	PQ46309A-4	SUB BRAKE ASSEMBLY(TAKE UP)
	13	PQM30001-389102	TENSION SPRING
	14	PQ46535A-1	REEL DISK ASSEMBLY(SUPPLY)
	15	PQ35014-1-1	SLIT DISK(SUPPLY)
	16	PQ21683-2-11	REEL DISK(TAKE UP)
	17	PQM30018-69	SPACER,X2
	18	PQM30003-38	BELT(CAPSTAN)
	19	PQ46497B-2	PULLEY ASSEMBLY
	19A	PQM30002-233	COMPRESSION SPRING
	19B	PQ46311	SPRING CAP
	21	PQ35015-1-1	SLIT DISK(TAKE UP)
	22	PQM30018-69	SPACER
	23	PQ46312B-9	IDLER ARM ASSEMBLY
	24	PQ46316A-1	CLUTCH UNIT(SUPPLY)
	25	PQ46323A-1	CLUTCH UNIT(TAKE UP)
	26	PQ46325B-9	GUIDE ARM ASSEMBLY
	27	PQ46326-2	TORSION SPRING
	28	PQ46327A-2	PINCH ROLLER ARM ASSEMBLY
	29	PQM30017-24	SLIT WASHER
	30	PEHE0182	AUDIO CONTROL HEAD
	31	PQ35481	HEAD BASE
	32	SPST2608Z	SCREW,X3
	33	PQM30002-192	COMPRESSION SPRING,X3
	34	SDSP2606Z	SCREW,X2
	35	PQ46330A-3	POLE BASE ASSEMBLY(SUPPLY)
	36	PQ46331A-1	POLE BASE ASSEMBLY(TAKE UP)
	37	PQ46332A-3	LOADING ARM ASSEMBLY(SUPPLY)
	38	PQ46337A-6	LOADING ARM ASSEMBLY(TAKE UP)
	39	PQ11657-1-9	GUIDE RAIL
	40	SPST2608Z	SCREW,X4
	41	SDST2612Z	SCREW
	42	PQ21684-1-3	CONTROL CAM
	43	PQ35138-1-2	CONTROL BRACKET
	45	PQ11658-1-14	CONTROL PLATE
	46	PQM30017-8	SLIT WASHER
	47	PQ21685-2-9	PINCH PLATE
	48	SPST2606Z	SCREW,X2
	49	SPSF2608M	SCREW
	50	PQ46342B-10	LEVER ASSEMBLY
	51	PQM30017-8	SLIT WASHER
	52	PQ35083-1-8	REEL BRACKET
	53	PQM30017-51	SLIT WASHER,X2
	54	Q03093-830	WASHER
	55	PQ35026-1-7	IDLER LEVER
	56	PQ11659-1-11	SLIDE PLATE
	57	PQ46344A-2	CHANGE LEVER ASSEMBLY
	58	PQ21686-1-3	TAKE UP LEVER ASSEMBLY
	59	PQ46345-1-2	TAKE UP HEAD
	60	PQM30001-387106	TENSION SPRING
⚠	61	PU60628-4	LOADING MOTOR
	62	SPSP3005Z	SCREW,X2
	63	PW30101-80AJ632	WIRE
	64	PQM30003-39	BELT
	65	PQ46395A	WORM GEAR ASSEMBLY
	66	PQ21699	WORM BEARING
	67	SPST2606Z	SCREW
⚠	68	PU61435-1-6	CAPSTAN MOTOR
	69	PQ46347E-14	SUB DECK ASSEMBLY
	70	SPSG2608Z	SCREW,X3
	71	PQ46356C-3	CAPSTAN BRAKE ASSEMBLY
	72	SDST2608Z	SCREW,X2
	73	PQM30001-384101	TENSION SPRING
	74	PQ46353A-2	CHANGE ARM ASSEMBLY
	75	PQ46354	CHANGE GEAR
	76	PQM30001-386	TENSION SPRING
	77	PQM30003-40	BELT
	78	PQ46355	CASSETTE GEAR
	79	PQ35030-1-5	LID GUIDE
	80	PQ21689-2	LED PRISM
	81	PEHE0237	FULL ERASE HEAD
	82	SDST2610Z	SCREW
	83	PU61432-1-1	ROTARY ENCODER
	84	PQ46568-1-2	MOTER GUIDE
	85	PQ46436A-1	CLEANER ASSEMBLY
	85A	PQ46418-1-2	CLEANER ROLLER
	85B	PQ46419-1-2	CLEANER
	85C	PQ35159-1-1	CLEANER ARM
	86	PQ43546-1-2	MOTOR PULLEY
	87	PQ35217-1-2	CTL BRACKET 2
	88	PQ46473-1-1	S-SW PIN
	89	PQ46474-1-2	S-SW HOLDER
	90	SPST2606Z	SCREW
	91	SDSP2604Z	SCREW
	92	SDSP2604Z	SCREW
	93	SDST2608Z	SCREW
	94	PQ46630	COMPRESSION SPRING
	99	PQ21680D-18	MAIN DECK ASSEMBLY

5.4 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <03>

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION
PW1	PB10990A-01	MAIN BOARD ASSEMBLY,S5300U
	PB10990B-01	MAIN BOARD ASSEMBLY,S7300U
IC1	JCP0056	IC
IC2	AN3969K	IC
IC3	BA6138	IC
⚠ IC101	XLA7795LS	IC
⚠	or BA7795LS	IC
IC301	UPD6459CS-501	IC (OSD)
	or UPD6459ACS-501	IC (OSD)
IC351	MM1117XS	IC
IC352	BA7623F	IC
IC401	BU2881BS	IC
IC451	BA7039	IC
	or XRA7039	IC
IC501	S-1460BF-B38	SOP IC (MCU)
	or S-1460BF-B38-W	SOP IC (MCU)
	or S-14P60AF-B38	SOP IC (MCU)
IC601	HD6433928TA55F	QFP IC (MCU)
IC602	XL93LC56AP	IC
	or AT93C56-10PC	IC
	or 93LC56/P	IC
	or 93LC56B/P	IC
IC603	S-80728AN-Z	IC
	or RE5VL28A	IC
IC604	TA7291S	IC
IC607	M50253P	IC
	or BU2090	IC
IC608	M66007P	IC
IC610	TC4W66F	IC
IC751	M37470M3-054SP	IC
Q51	2SD1450S,T	TRANSISTOR
Q52	2SC3311A(RS)	TRANSISTOR
Q101	DTC114EU	TRANSISTOR
Q131	2SC4081(RS)	TRANSISTOR
Q132	2SA933S(RS)	TRANSISTOR
Q133	2SA933S(RS)	TRANSISTOR
Q134	2SC4081(RS)	TRANSISTOR
Q135	2SA933S(RS)	TRANSISTOR
Q201	2SC4081(QRS)	TRANSISTOR
Q202	2SA1576(QRS)	TRANSISTOR
Q203	2SC4081(QRS)	TRANSISTOR
Q221	2SC4081(QRS)	TRANSISTOR
Q222	2SC4081(QRS)	TRANSISTOR
Q223	2SC4081(QRS)	TRANSISTOR
Q241	DTC144EU	TRANSISTOR
Q242	2SC4081(QRS)	TRANSISTOR
Q243	2SC4081(QRS)	TRANSISTOR
Q261	DTC144EU	TRANSISTOR
Q262	DTC124EU	TRANSISTOR
Q263	DTC124EU	TRANSISTOR
Q264	DTC124EU	TRANSISTOR
Q281	DTC124EU	TRANSISTOR
Q282	DTA124EU	TRANSISTOR
Q301	2SA1576(QRS)	TRANSISTOR
Q302	2SC4081(QRS)	TRANSISTOR
Q351	2SA1576(QRS)	TRANSISTOR
Q352	2SC4081(QRS)	TRANSISTOR
Q401	DTC114EU	TRANSISTOR
Q501	2SB1256	TRANSISTOR
Q601	2SC4081(QRS)	TRANSISTOR
Q602	PN268VI	PH TRANSISTOR
Q603	PN268VI	PH TRANSISTOR
Q605	DTC124EU	TRANSISTOR
Q606	DTC143EU	TRANSISTOR
Q607	DTC124EU	TRANSISTOR
Q608	DTC124EU	TRANSISTOR
Q609	DTC124EU	TRANSISTOR
Q801	2SK1445-CB14	FE TRANSISTOR
	or 2SK1976-F44	FE TRANSISTOR
	or 2SK2123-LT	FE TRANSISTOR
Q802	2SC3616(ML)	TRANSISTOR
Q851	2SC1740S(RS)	TRANSISTOR
Q881	2SC3616(MLK)	TRANSISTOR
Q882	2SD1913(RS)	TRANSISTOR
Q883	2SC4081(R)	TRANSISTOR
Q884	DTA114EU	TRANSISTOR
Q885	DTC143TU	TRANSISTOR
Q886	2SB1256	TRANSISTOR
Q1001	2SC3243D,E	TRANSISTOR
Q1021	DTC144EU	TRANSISTOR
Q1022	2SC4081(RS)	TRANSISTOR
Q1023	2SC4081(RS)	TRANSISTOR
Q1024	2SA1576(RS)	TRANSISTOR
Q1025	2SC4081(RS)	TRANSISTOR
D1	DAP202U	DIODE
D101	RD6.2ES-T1B2	ZENER DIODE
D102	DAP202U	DIODE
D262	1SS133	DIODE
	or MA165	DIODE
	or 1N4148M	DIODE
D264	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D283	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D451	1SS133	DIODE
	or MA165	DIODE
	or 1N4148M	DIODE
D601	11ES2	DIODE
D602	11ES2	DIODE
D603	RD9.1ES-T1B2	ZENER DIODE
D606	1SS133	DIODE
	or MA165	DIODE
	or 1N4148M	DIODE
D607	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D608	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D609	SIR-381SB3FM	LE DIODE
	or SIR-381SB3FX1M	LE DIODE
D612	1SS133	DIODE
	or 1N4148M	DIODE
	or MA165	DIODE
D613	1SS133	DIODE
	or MA165	DIODE
	or 1N4148M	DIODE

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
D614	1SS133	DIODE	
	or 1N4148M	DIODE	
	or MA165	DIODE	
D615	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
D801	1SR139-600-T2	DIODE	
D802	1SR139-600-T2	DIODE	
D803	1SR139-600-T2	DIODE	
D804	1SR139-600-T2	DIODE	
D807	RD15ES-T1B3	ZENER DIODE	
	or UZ15BSC	ZENER DIODE	
D808	1N4148M	DIODE	
	or 1SS133	DIODE	
	or MA165	DIODE	
D851	1SR153-200-T1	FR DIODE	
D852	RL2Z-LFB2	FR DIODE	
D853	RL2Z-LFB2	FR DIODE	
D856	21DQ04	BARRIER DIODE	
	or RK14LF-B2	BARRIER DIODE	
D857	AU01Z	FR DIODE	
	or ERA18-02-T2	FR DIODE	
	or 1SR153-200-T2	FR DIODE	
D858	1SR153-200-T1	FR DIODE	
D860	RD15ES-T1B1	ZENER DIODE	
	or UZ15BSA	ZENER DIODE	
D861	RD6.2ES-T1B3	ZENER DIODE	
	or UZ6.2BSC	ZENER DIODE	
	or MTZV6.2C	ZENER DIODE	
D862	RD30ES-T1B1	ZENER DIODE	
	or MTZJ30(A)	ZENER DIODE	
	or UZ30BSA	ZENER DIODE	
D863	1SR153-200-T1	FR DIODE	
D882	RD5.1JSB1	ZENER DIODE	
	or MA4051N(L)	ZENER DIODE	
D883	1N4148M	DIODE	
	or MA165	DIODE	
	or 1SS133	DIODE	
D885	11ES2	DIODE	
	or ERA15-02	DIODE	
D1001	HZ30-2L-T2	ZENER DIODE	
D1002	MTZ10B	ZENER DIODE	
D1021	1SS133	DIODE	
	or MA165	DIODE	
	or 1N4148M	DIODE	
D1022	1SS133	DIODE	
	or 1N4148M	DIODE	
	or MA165	DIODE	
R1	QRSA08J-511YN	RESISTOR	510Ω,1/10W
R2	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R3	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R4	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R5	NRVA62B-153N	RESISTOR	15kΩ,1/16W
R6	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R7	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R8	QRSA08J-334YN	RESISTOR	330kΩ,1/10W
R9	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R10	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R11	NRVA62B-113N	RESISTOR	11kΩ,1/16W
R12	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R13	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R14	QRSA08J-511YN	RESISTOR	510Ω,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R15	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R21	QRD161J-221	RESISTOR	220Ω,1/6W
R25	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R26	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R28	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R29	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R30	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R31	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R32	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R33	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R51	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R52	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R53	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R61	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
R62	QRSA08J-203YN	RESISTOR	20kΩ,1/10W
R63	QRSA08J-183YN	RESISTOR	18kΩ,1/10W
R64	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
R65	QRSA08J-683YN	RESISTOR	68kΩ,1/10W
R66	QRSA08J-203YN	RESISTOR	20kΩ,1/10W
R67	QVPA606-104Z	V RESISTOR,AUDIO LEVEL	
R68	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
R69	QRSA08J-203YN	RESISTOR	20kΩ,1/10W
R70	QRSA08J-203YN	RESISTOR	20kΩ,1/10W
R71	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
R81	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R82	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R83	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R84	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R102	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R103	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R104	QRSA08J-432YN	RESISTOR	4.3kΩ,1/10W
R105	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R106	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R107	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R108	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R109	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R110	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R111	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R112	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R113	QRSA08J-682YN	RESISTOR	6.8kΩ,1/10W
R114	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R115	QRD161J-221	RESISTOR	220Ω,1/6W
R116	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R117	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R118	QRSA08J-274YN	RESISTOR	270kΩ,1/10W
R119	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R120	QRD161J-103	RESISTOR	10kΩ,1/6W
R131	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R132	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R133	QRSA08J-682YN	RESISTOR	6.8kΩ,1/10W
R134	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R135	QRSA08J-3R3YN	RESISTOR	3.3Ω,1/10W
R136	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R137	QRSA08J-183YN	RESISTOR	18kΩ,1/10W
R138	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R139	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R140	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R141	QRD161J-101	RESISTOR	100Ω,1/6W
R142	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R143	QRD161J-151	RESISTOR	150Ω,1/6W
R144	QRSA08J-3R3YN	RESISTOR	3.3Ω,1/10W
R145	QRSA08J-473YN	RESISTOR	47kΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R146	QRSA08J-183YN	RESISTOR	18kΩ,1/10W
R201	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R202	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R203	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R204	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R205	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R206	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10W
R207	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R208	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10W
R209	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R221	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R223	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R224	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R225	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R226	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R227	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R229	QRSA08J-272YN	RESISTOR	2.7kΩ,1/10W
R231	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R241	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R242	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R243	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R244	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R245	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R246	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R247	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R248	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R249	QRSA08J-270YN	RESISTOR	27Ω,1/10W
R250	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R251	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R252	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R253	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R261	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R264	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R265	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
R266	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R267	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R268	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R269	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R270	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R271	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R282	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R283	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R284	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R301	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R302	QRSA08J-680YN	RESISTOR	68Ω,1/10W
R303	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R305	QRSA08J-563YN	RESISTOR	56kΩ,1/10W
R306	QRSA08J-224YN	RESISTOR	220kΩ,1/10W
R307	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R308	QRSA08J-391YN	RESISTOR	390Ω,1/10W
R309	QVPA606-333Z	V RESISTOR,Fh	
R310	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
R311	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R312	QRSA08J-682YN	RESISTOR	6.8kΩ,1/10W
R313	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R314	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R315	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R316	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R317	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R318	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R319	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R320	QRSA08J-102YN	RESISTOR	1kΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R321	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R322	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R351	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R352	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R353	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R355	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R357	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R359	QRSA08J-750YN	RESISTOR	75Ω,1/10W
R363	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R364	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R366	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R367	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R368	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R369	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R370	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R371	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R373	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R375	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R401	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R402	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R403	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R404	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R405	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R406	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R408	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R409	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R410	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R411	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R412	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R413	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R414	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R415	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R418	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R451	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R452	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R453	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R454	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R455	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R456	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
R458	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R501	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R502	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R503	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R504	QRG01DJ-100X	RESISTOR	10Ω,1W
R506	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R601	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R602	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R603	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R604	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R605	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R606	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R607	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R608	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R609	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R610	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R611	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R612	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R613	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R614	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R615	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R616	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R617	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R618	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R619	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R621	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R622	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R623	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R624	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R625	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R626	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R627	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R629	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R630	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R631	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R632	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R633	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R634	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R635	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R636	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R637	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R638	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R639	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R641	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R642	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R643	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R644	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R645	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R646	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R647	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R648	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R649	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R650	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R651	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R652	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R654	QRSA08J-272YN	RESISTOR	2.7kΩ,1/10W
R655	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R658	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R659	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R660	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R661	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R662	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R663	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R664	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R665	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R666	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R667	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R668	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R669	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R670	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R671	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R672	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R673	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R674	QRSA08J-682YN	RESISTOR	6.8kΩ,1/10W
R675	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R676	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R682	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R684	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R685	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R686	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R687	QRD161J-750	RESISTOR	75Ω,1/6W
R688	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R689	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R690	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R691	QRSA08J-103YN	RESISTOR	10kΩ,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R694	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R695	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R696	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R697	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
R698	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R701	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R704	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R705	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R706	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R707	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R708	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R709	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R710	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R711	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R712	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R714	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R715	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R716	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R717	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R718	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R719	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R720	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R721	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R722	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R723	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R724	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R725	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R726	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R727	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R728	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R729	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R751	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R752	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R753	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R754	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R755	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R756	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R757	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R758	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R760	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R761	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R762	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R763	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R764	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R765	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R776	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R777	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R778	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R804	QRD161J-683	RESISTOR	68kΩ,1/6W
R805	QRD161J-683	RESISTOR	68kΩ,1/6W
R808	QRX014J-R27Z	MF RESISTOR	0.27Ω,1W
R810	QRG019J-331A	OMF RESISTOR	330Ω,1W
R811	QRD161J-152	RESISTOR	1.5kΩ,1/6W
R814	QRD161J-561	RESISTOR	560Ω,1/6W
R815	QRD161J-473	RESISTOR	47kΩ,1/6W
R816	QRD161J-224	RESISTOR	220kΩ,1/6W
R851	QRX014J-4R7Z	MF RESISTOR	4.7Ω,1W
⚠ R852	QRZ0077-470X	FUSIBLE RESISTOR	47Ω,1/4W
R853	QRG02DJ-222X	OMF RESISTOR	2.2kΩ,2W
R854	QRV144F-4870AY	CMF RESISTOR	487Ω,1/4W
R855	QRD161J-471	RESISTOR	470Ω,1/6W
R856	QRV144F-3740AY	CMF RESISTOR	374Ω,1/4W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R857	QRD161J-122	RESISTOR	1.2kΩ,1/6W
R881	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R882	QRD161J-473	RESISTOR	47kΩ,1/6W
R883	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R884	QRD161J-471	RESISTOR	470Ω,1/6W
R885	QVPA606-471Z	V RESISTOR,SWD 5V	
R886	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R888	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R891	QRD161J-102	RESISTOR	1kΩ,1/6W
R896	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R897	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R1005	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R1006	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R1007	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R1008	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R1009	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R1012	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R1021	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R1022	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R1023	QRSA08J-184YN	RESISTOR	180kΩ,1/10W
R1024	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R1025	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R1026	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R1027	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R1028	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R1029	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R1030	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R1031	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
R1032	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R1033	QRSA08J-682YN	RESISTOR	6.8kΩ,1/10W
R1034	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
C1	QEKJ1CM-336	E CAPACITOR	33μF,16V
C2	QCYA1EK-473	CAPACITOR	0.047μF,25V
C3	QEKJ1CM-106	E CAPACITOR	10μF,16V
C4	QEKJ1AM-107	E CAPACITOR	100μF,10V
C5	QCYA1HK-153	CAPACITOR	0.015μF,50V
C6	QCYA1HK-103	CAPACITOR	0.01μF,50V
C7	QCYA1EK-104	CAPACITOR	0.1μF,25V
C8	QETC1AM-107	E CAPACITOR	100μF,10V
C9	QCYA1HK-102	CAPACITOR	0.001μF,50V
C12	QCYA1HK-103	CAPACITOR	0.01μF,50V
C13	QCYA1EK-473	CAPACITOR	0.047μF,25V
C14	QEKJ1HM-224	E CAPACITOR	0.22μF,50V
C15	QCYA1EK-104	CAPACITOR	0.1μF,25V
C16	QCYA1HK-103	CAPACITOR	0.01μF,50V
C17	QEKJ1AM-107	E CAPACITOR	100μF,10V
C18	QCYA1HK-153	CAPACITOR	0.015μF,50V
C19	QEKJ1AM-107	E CAPACITOR	100μF,10V
C20	QEKJ1CM-106	E CAPACITOR	10μF,16V
C21	QCYA1EK-473	CAPACITOR	0.047μF,25V
C22	QEKJ1CM-336	E CAPACITOR	33μF,16V
C24	QEKJ1CM-476	E CAPACITOR	47μF,16V
C25	QCC11EK-473	CAPACITOR	0.047μF,25V
C27	QEKJ1CM-106	E CAPACITOR	10μF,16V
C28	QEKJ1CM-106	E CAPACITOR	10μF,16V
C29	QEKJ1AM-107	E CAPACITOR	100μF,10V
C35	QEKJ1CM-106	E CAPACITOR	10μF,16V
C36	QEKJ1CM-106	E CAPACITOR	10μF,16V
C38	QEKJ1CM-476	E CAPACITOR	47μF,16V
C39	QEKJ1CM-476	E CAPACITOR	47μF,16V
C51	QETC1CM-476	E CAPACITOR	47μF,16V
C52	QETC1CM-476	E CAPACITOR	47μF,16V

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
C61	QEKJ1CM-106	E CAPACITOR	10μF,16V
C62	QEKJ1CM-106	E CAPACITOR	10μF,16V
C63	QEKJ1CM-106	E CAPACITOR	10μF,16V
C64	QEKJ1CM-106	E CAPACITOR	10μF,16V
C65	QEKJ1CM-106	E CAPACITOR	10μF,16V
C66	QEKJ1CM-106	E CAPACITOR	10μF,16V
C67	QEKJ1CM-476	E CAPACITOR	47μF,16V
C68	QEKJ1CM-476	E CAPACITOR	47μF,16V
C69	QCYA1EK-393	CAPACITOR	0.039μF,25V
C72	QCC11EK-104	CAPACITOR	0.1μF,25V
C81	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C82	QEKJ1EM-475	E CAPACITOR	4.7μF,25V
C83	QEKJ1CM-476	E CAPACITOR	47μF,16V
C84	QETC1HM-106	E CAPACITOR	10μF,50V
C85	QEKJ1CM-106	E CAPACITOR	10μF,16V
C101	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C102	QERF1CM-476	E CAPACITOR	47μF,16V
C104	QERF1HM-105	E CAPACITOR	1μF,50V
C105	QCC11EJ-682	CAPACITOR	0.0068μF,25V
C106	QCC11EJ-223	CAPACITOR	0.022μF,25V
C107	QEKC1EM-475	E CAPACITOR	4.7μF,25V
C108	QCYA1HK-681	CAPACITOR	680pF,50V
C109	QCYA1EK-123	CAPACITOR	0.012μF,25V
C110	QEKJ1CM-226	E CAPACITOR	22μF,16V
C111	QEKJ1HM-104	E CAPACITOR	0.1μF,50V
C112	QEKJ1CM-226	E CAPACITOR	22μF,16V
C113	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
C114	QCC31EJ-273	CAPACITOR	0.027μF,25V
C115	QEKJ1CM-476	E CAPACITOR	47μF,16V
C131	QCYA1HK-331	CAPACITOR	330pF,50V
C132	QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V
C133	QEKJ1HM-225	E CAPACITOR	2.2μF,50V
C134	QCYA1HK-472	CAPACITOR	0.0047μF,50V
C135	QCYA1HK-103	CAPACITOR	0.01μF,50V
C136	QFLC1HJ-333Z	F CAPACITOR	0.033μF,50V
C137	QEKJ1CM-106	E CAPACITOR	10μF,16V
C138	QCYA1HK-332	CAPACITOR	0.0033μF,50V
C139	QCYA1HK-103	CAPACITOR	0.01μF,50V
C201	QCTA1CH-680	CAPACITOR	68pF,16V
C202	QCTA1CH-101	CAPACITOR	100pF,16V
C203	QCTA1CH-200	CAPACITOR	20pF,16V
C204	QCYA1HK-103	CAPACITOR	0.01μF,50V
C205	QEKJ0JM-476	E CAPACITOR	47μF,6.3V
C206	QETC1HM-474	E CAPACITOR	0.47μF,50V
C222	QCYA1HK-103	CAPACITOR	0.01μF,50V
C223	QCTA1CH-330	CAPACITOR	33pF,16V
C224	QCYA1EK-473	CAPACITOR	0.047μF,25V
C226	QCYA1HK-103	CAPACITOR	0.01μF,50V
C227	QEKC0JM-476	E CAPACITOR	47μF,6.3V
C228	QETC1HM-106	E CAPACITOR	10μF,50V
C229	QETC1HM-106	E CAPACITOR	10μF,50V
C241	QEKC1CM-476	E CAPACITOR	47μF,16V
C242	QCYA1HK-103	CAPACITOR	0.01μF,50V
C243	QCTA1CH-390	CAPACITOR	39pF,16V
C244	QCTA1CH-151	CAPACITOR	150pF,16V
C245	QCTA1CH-151	CAPACITOR	150pF,16V
C246	QCYA1HK-103	CAPACITOR	0.01μF,50V
C247	QCTA1CH-390	CAPACITOR	39pF,16V
C248	QCYA1HK-103	CAPACITOR	0.01μF,50V
C249	QCYA1HK-821	CAPACITOR	820pF,50V
C250	QCYA1HK-103	CAPACITOR	0.01μF,50V
C261	QEKJ1CM-476	E CAPACITOR	47μF,16V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C262	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C264	QCTA1CH-470	CAPACITOR	47pF,16V
	C265	QCTA1CH-330	CAPACITOR	33pF,16V
	C266	QCTA1CH-150	CAPACITOR	15pF,16V
	C267	QCTA1CH-101	CAPACITOR	100pF,16V
	C281	QCTA1CH-510	CAPACITOR	51pF,16V
	C282	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C283	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C301	QCTA1CH-101	CAPACITOR	100pF,16V
	C302	QCYA1HK-271	CAPACITOR	270pF,50V
	C303	QCVB1CM-103	CAPACITOR	0.01μF,16V
	C304	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C305	QEKJ1HM-105	E CAPACITOR	1μF,50V
	C306	QCYA1HK-472	CAPACITOR	0.0047μF,50V
	C307	QCTA1CH-101	CAPACITOR	100pF,16V
	C308	QCYA1HK-221	CAPACITOR	220pF,50V
	C309	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
	C310	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C311	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C312	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C313	QCVB1CM-103	CAPACITOR	0.01μF,16V
	C314	QCTA1CH-220	CAPACITOR	22pF,16V
	C315	QCTA1CH-330	CAPACITOR	33pF,16V
	C316	QCTA1CH-270	CAPACITOR	27pF,16V
	C317	QCTA1CH-270	CAPACITOR	27pF,16V
	C318	QCTA1CH-470	CAPACITOR	47pF,16V
	C319	QCTA1CH-101	CAPACITOR	100pF,16V
	C320	QCTA1CH-470	CAPACITOR	47pF,16V
	C321	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C351	QETC1CM-476	E CAPACITOR	47μF,16V
	C352	QETC1HM-106	E CAPACITOR	10μF,50V
	C353	QETC1HM-106	E CAPACITOR	10μF,50V
	C354	QETC1HM-106	E CAPACITOR	10μF,50V
	C355	QETN0JM-108ZS	E CAPACITOR	1000μF,6.3V
	C356	QETN0JM-108ZS	E CAPACITOR	1000μF,6.3V
	C357	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C359	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C360	QETC1CM-476	E CAPACITOR	47μF,16V
	C361	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C362	QCTA1CH-150	CAPACITOR	15pF,16V
	C363	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C364	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C365	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C367	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C371	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C401	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C402	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C403	QCYA1EK-563	CAPACITOR	0.056μF,25V
	C404	QCTA1CH-101	CAPACITOR	100pF,16V
	C405	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C406	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C407	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C408	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C409	QCYA1EK-223	CAPACITOR	0.022μF,25V
	C411	QCYA1HK-222	CAPACITOR	0.0022μF,50V
	C412	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C413	QCY81CK-105	CAPACITOR	1μF,16V
	C414	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C415	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C416	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C417	QCTA1CH-680	CAPACITOR	68pF,16V
	C451	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C452	QCC31CK-104	CAPACITOR	0.1μF,16V
	C453	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C454	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C455	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C456	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C458	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C459	QFV11HJ-563AZ	F CAPACITOR	0.056μF,50V
	C501	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C502	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C503	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C504	QCTA1CH-101	CAPACITOR	100pF,16V
	C505	QCTA1CH-101	CAPACITOR	100pF,16V
	C506	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C507	QETC0JM-477	E CAPACITOR	470μF,6.3V
	C601	QAT3120-450Z	TRIM CAPACITOR,TIMER CLOCK	
	C602	QCTA1CH-180	CAPACITOR	18pF,16V
	C607	QCYA1HK-471	CAPACITOR	470pF,50V
	C610	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C611	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C612	PU60676-223	E CAPACITOR,S5300U	0.022μF,5.5V
		PU60676-224	E CAPACITOR,S7300U	0.22μF,5.5V
	C613	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C614	QCYA1EK-473	CAPACITOR	0.047μF,25V
	C616	QEKJ1CM-106	E CAPACITOR	10μF,16V
	C617	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C623	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C624	QCTA1CH-101	CAPACITOR	100pF,16V
	C635	QCTA1CH-470	CAPACITOR	47pF,16V
	C636	QCTA1CH-470	CAPACITOR	47pF,16V
	C639	QCYA1HK-271	CAPACITOR	270pF,50V
	C651	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C652	QCYA1EK-473	CAPACITOR	0.047μF,25V
	C653	QCTA1CH-100	CAPACITOR	10pF,16V
	C654	QCTA1CH-100	CAPACITOR	10pF,16V
	C655	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C751	QCTA1CH-220	CAPACITOR	22pF,16V
	C752	QCYA1HK-102	CAPACITOR	0.001μF,50V
	C753	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C754	QCTA1CH-220	CAPACITOR	22pF,16V
	C755	QCTA1CH-220	CAPACITOR	22pF,16V
	C756	QCTA1CH-220	CAPACITOR	22pF,16V
	C760	QEKJ1HM-335	E CAPACITOR	3.3μF,50V
	C761	QCTA1CH-101	CAPACITOR	100pF,16V
	C762	QCTA1CH-101	CAPACITOR	100pF,16V
	C763	QCTA1CH-101	CAPACITOR	100pF,16V
⚠	C802	QFZ9037-473	F CAPACITOR	0.047μF
⚠	C809	QCZ9016-222M	CAPACITOR	0.0022μF
⚠	C810	QETM2DM-826R	E CAPACITOR	82μF,200V
	C812	QETC1HM-105	E CAPACITOR	1μF,50V
	C814	QCZ0136-101Z	CAPACITOR	100pF,1kV
	C816	QFLC1HJ-682Z	F CAPACITOR	0.0068μF,50V
	C821	QFV21HJ-104AZ	F CAPACITOR	0.1μF,50V
	C851	QETC1JM-226	E CAPACITOR	22μF,63V
	C852	QEM91CM-827	E CAPACITOR	820μF,16V
	C853	QEM91AM-128	E CAPACITOR	1200μF,10V
	C854	QETC1HM-226	E CAPACITOR	22μF,50V
	C855	QEMR1AM-107	E CAPACITOR	100μF,10V
	C856	QETC1AM-477	E CAPACITOR	470μF,10V
	C857	QETC1CM-477	E CAPACITOR	470μF,16V
	C858	QETC1HM-474	E CAPACITOR	0.47μF,50V
	C859	QFLC1HJ-103Z	F CAPACITOR	0.01μF,50V
	C861	QEM91EM-337	E CAPACITOR	330μF,25V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C881	QEKJ0JM-107	E CAPACITOR	100μF,6.3V
	C882	QETC1HM-106	E CAPACITOR	10μF,50V
	C883	QETC1CM-107	E CAPACITOR	100μF,16V
	C1001	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C1002	QCYA1HK-222	CAPACITOR	0.0022μF,50V
	C1003	QEKJ1HM-106	E CAPACITOR	10μF,50V
	C1005	QETC1AM-477	E CAPACITOR	470μF,10V
	C1006	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C1007	QFV21HJ-154AZ	F CAPACITOR	0.15μF,50V
	C1021	QCYA1HK-103	CAPACITOR	0.01μF,50V
	C1022	QEKJ1HM-104	E CAPACITOR	0.1μF,50V
	C1023	QCTA1CH-471	CAPACITOR	470pF,16V
	C1024	QCYA1HK-471	CAPACITOR	470pF,50V
	C1025	QCYA1EK-223	CAPACITOR	0.022μF,25V
	C1026	QEKJ1HM-474	E CAPACITOR	0.47μF,50V
	C1027	QEKJ1CM-476	E CAPACITOR	47μF,16V
	C1028	QCYA1EK-104	CAPACITOR	0.1μF,25V
	C1029	QEKJ1CM-106	E CAPACITOR	10μF,16V
	L101	PU58308-123J	COIL	12mH
	L201	PELN0975-101JZ	COIL	100μH
	L202	PU59988-101J	COIL	100μH
	L203	PU59988-330J	COIL	33μH
	L221	PELN0975-101JZ	COIL	100μH
	L222	PU48530-471J	COIL	470μH
	L223	PU48530-222J	COIL	2.2mH
	L241	PELN0975-101JZ	COIL	100μH
	L242	PU59988-470J	COIL	47μH
	L243	PU59988-330J	COIL	33μH
	L244	PU59988-101J	COIL	100μH
	L261	PU48530-102K	COIL	1mH
	L262	PU59988-121JY	COIL	120μH
	L263	PU59988-221J	COIL	220μH
	L264	PU59988-680J	COIL	68μH
	L281	PU59988-390J	COIL	39μH
	L282	PU48530-100J	COIL	10μH
	L301	PU59988-1R0JY	COIL	1μH
	L302	PU59988-1R0JY	COIL	1μH
	L303	PU58333-220JZ	COIL	22μH
	L304	PU48530-100J	COIL	10μH
	L351	PELN0975-101JZ	COIL	100μH
	L352	PELN0975-101JZ	COIL	100μH
	L353	PU59988-820J	COIL	82μH
	L401	PU59988-270J	COIL	27μH
	L451	PU59988-270J	COIL	27μH
	L501	PU48530-101J	COIL	100μH
	L502	PU48530-101J	COIL	100μH
	L601	PU59988-R22KY	COIL	0.22μH
	L602	PU59988-100J	COIL	10μH
	L603	PU48530-100K	COIL	10μH
	L604	PU54223-100J	COIL	10μH
	L605	PU54223-100J	COIL	10μH
	L851	PELN0628-330KZ	COIL	33μH
	L852	PELN0270-330KZ	COIL	33μH
	L881	PU48530-101K	COIL	100μH
	L1001	PELN0530-101JZ	COIL	100μH
	L1002	QRD161J-0R0	RESISTOR	0Ω,1/6W
⚠	CF601	PEVB0497	RESONATOR	
⚠	CF751	PEVB0340	RESONATOR	
⚠	X301	PEVB0442	CRYSTAL RESONATOR	
⚠	X501	PEVB0618	RESONATOR	
⚠	X601	PEVB0422	CRYSTAL RESONATOR	
	SW1001	PESW0671	SLIDE SWITCH,RF CH SW	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	K801	PELN0662-Z	FERRATE BEADS	
⚠	PC801	PC817	PH COUPLER	
	PS601	PU61433	REEL SENSOR	
	PS602	PU61433	REEL SENSOR	
⚠	T101	PELN0860	OSC TRANSFORMER	
⚠	T102	PELN0861	OSC TRANSFORMER	
⚠	T801	PELN0426-04	SW TRANS	
	T1001	PELN0806	COIL	
	ET1	PQ21623-1-2	EARTH PLATE(RF)	
	J1	PEMC1117	PIN JACK(SW),A/V IN 1	
	J3	PEMC1116	PIN JACK,A/V OUT	
	J4	PEMC1118	S JACK,S OUT	
	J5	PEMC1118	S JACK,S IN	
	J6	PU60612	MINI JACK,R.PAUSE	
	J7	PU60612	MINI JACK,C.BOX	
	TB1	PQ35373B-3	TERMINAL BOARD ASSEMBLY	
⚠	FC801	PEMC0965-Z	FUSE CLIP	
⚠	FC802	PEMC0965-Z	FUSE CLIP	
⚠	LF802	PU59707	LINE FILTER	
	OT1	SDSF4012M	SCREW,X2 TERMINAL BOARD	
	OT2	SDSF3010Z	SCREW,X2 TERMINAL BOARD	
	OT4	PQ46408-1-2	SENSOR CAP,X2	
⚠	CR801	PECA0962	CAPRISTOR	
⚠	TU1001	PERF0204-01-03	TUNER UNIT	
	CN101	PU60910-2	CONNECTOR,(1-2)FE HEAD	
	CN102	PU60910-7	CONNECTOR,(1-4)A/C HEAD	
	CN203	PEMC1055-013	CONNECTOR,(2-14)PRE/REC	
	CN204	PEMC1055-014	CONNECTOR,(1-14)PRE/REC	
	CN205	PEMC0846-014	CONNECTOR,(1-14)DIGITAL SUB	
	CN206	PEMC0846-010	CONNECTOR,(1-10)DIGITAL SUB	
	CN207	PEMC1101-006	CONNECTOR,(1-6)JACK	
	CN301	PU59555-4	CONNECTOR,(1-4)EVR	
	CN402	PEMC1101-004	CONNECTOR,(1-4)DRUM MOTOR	
	CN601	PEMC1077	CONNECTOR,(1-8)CAP MDA	
	CN602	PU61434-1-1	CONNECTOR,(1-5)ROTARY ENCODER	
	CN603	PU60727-2	CONNECTOR,(1-2)LOADING MOTOR	
	CN604	PEMC1101-008	CONNECTOR,(5-12)DISPLAY	
	CN605	PEMC1101-005	CONNECTOR,(1-5)DISPLAY	
	CN606	PU59555-7	CONNECTOR,(1-7)JOG/SUTTLE	
⚠	CN801	PU60250-2	CONNECTOR,(1-2)AC IN	
⚠	CP401	ICP-N15	CIRCUIT PROTECTOR	
⚠	CP601	ICP-N25	CIRCUIT PROTECTOR	
⚠	CP851	ICP-N20	CIRCUIT PROTECTOR	
⚠	CP852	ICP-N25	CIRCUIT PROTECTOR	
⚠	CP1001	ICP-N15	CIRCUIT PROTECTOR	
⚠	F801	QMF51N2-R70J1	FUSE	T0.7A

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VIDEO UNIT BOARD ASSEMBLY <05>

PW1	PB10966G	VIDEO UNIT BOARD ASSEMBLY,S5300U	
	PB10966K	VIDEO UNIT BOARD ASSEMBLY,S7300U	
IC1	JCP0054	IC	
IC2	M62353GP	IC	
IC3	NJM431U-XE	IC	
IC4	VC2076MP-XE	IC	

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
IC6	93LC56/P	IC	
	or XL93LC56AP	IC	
	or 93LC56B/P	IC	
	or AT93C56-10PC	IC	
IC7	TC4S81F	IC	
Q1	2SA1576(QRS)	TRANSISTOR	
Q5	2SC4081(QRS)	TRANSISTOR	
Q6	2SA1576(QRS)	TRANSISTOR	
R2	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R5	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R6	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R7	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R8	NRSA63J-333N	RESISTOR	33kΩ,1/16W
R9	NRVA63D-822N	MF RESISTOR	8.2kΩ,1/16W
R10	NRVA63D-152N	MF RESESTOR	
R11	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R12	NRVA63D-561N	MF RESISTOR	560Ω,1/16W
R13	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R14	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R17	NRSA63J-391N	RESISTOR	390Ω,1/16W
R18	NRVA63D-391N	RESISTOR	390Ω,1/16W
R19	NRVA63D-102N	MF RESISTOR	1kΩ,1/16W
R22	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R23	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R24	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R25	NRSA63J-332N	RESISTOR	3.3kΩ,1/16W
R26	NRSA63J-151N	RESISTOR	150Ω,1/16W
R27	NRSA63J-162N	RESISTOR	1.6kΩ,1/16W
R28	NRSA63J-391N	RESISTOR	390Ω,1/16W
R29	NRSA63J-122N	RESISTOR	1.2kΩ,1/16W
R30	NRVA63D-102N	MF RESISTOR	1kΩ,1/16W
R31	NRVA63D-471N	RESISTOR	470Ω,1/16W
R32	NRVA63D-102N	MF RESISTOR	1kΩ,1/16W
R33	NRVA63D-152N	MF RESESTOR	
R34	NRVA63D-332N	MF RESISTOR	3.3kΩ,1/16W
R35	NRVA63D-332N	MF RESISTOR	3.3kΩ,1/16W
R37	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R46	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R47	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R48	NRVA63D-243N	RESISTOR	24kΩ,1/16W
R49	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R50	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R51	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R52	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R53	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R54	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R55	NRSA63J-272N	RESISTOR	2.7kΩ,1/16W
R56	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R57	NRSA63J-162N	RESISTOR	1.6kΩ,1/16W
R58	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R59	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R60	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R61	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R63	NRSA63J-103N	RESISTOR	10kΩ,1/16W
R64	NRSA63J-475N	RESISTOR	4.7MΩ,1/16W
R65	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R67	NRSA63J-682N	RESISTOR	6.8kΩ,1/16W
R68	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R69	NRSA63J-101N	RESISTOR	100Ω,1/16W
R73	NRSA63J-334N	RESISTOR	330kΩ,1/16W
R75	NRSA63J-101N	RESISTOR	100Ω,1/16W
R79	NRSA63J-0R0N	RESISTOR	0Ω,1/16W
R85	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
C2	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C5	QETC1HM-105	E CAPACITOR	1μF,50V
C7	QETC1HM-104	E CAPACITOR	0.1μF,50V
C8	NCT08CH-680A	CAPACITOR	68pF,50V
C10	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C11	NCB31EK-103A	CAPACITOR	0.01μF,25V
C12	QETC1HM-106	E CAPACITOR	10μF,50V
C13	QETC1HM-225	E CAPACITOR	2.2μF,50V
C14	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C15	QETC1HM-475	E CAPACITOR	4.7μF,50V
C16	NCB31EK-153A	CAPACITOR	0.015μF,25V
C18	QETC1HM-105	E CAPACITOR	1μF,50V
C19	QETC1CM-476	E CAPACITOR	47μF,16V
C20	NCB31EK-103A	CAPACITOR	0.01μF,25V
C21	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C22	NCT08CH-331A	CAPACITOR	330pF,50V
C23	QCYA1EK-104	CAPACITOR	0.1μF,25V
C25	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C26	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C27	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C28	NCB31HK-103A	CAPACITOR	0.01μF,50V
C29	QETC1CM-476	E CAPACITOR	47μF,16V
C30	NCB31EK-103A	CAPACITOR	0.01μF,25V
C31	NCT08CH-161A	CAPACITOR	160pF,50V
C32	NCT06CH-120A	CAPACITOR	12pF,50V
C33	QETC1HM-104	E CAPACITOR	0.1μF,50V
C35	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C36	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C37	QETC1HM-474	E CAPACITOR	0.47μF,50V
C38	QETC1HM-104	E CAPACITOR	0.1μF,50V
C39	QETC1HM-474	E CAPACITOR	0.47μF,50V
C40	NCF31HZ-103A	CAPACITOR	0.01μF,50V
C41	QETC1HM-106	E CAPACITOR	10μF,50V
C42	QETC1HM-106	E CAPACITOR	10μF,50V
C43	QCC31CK-473	CAPACITOR	0.047μF,16V
C44	NCB31EK-103A	CAPACITOR	0.01μF,25V
C45	QETC1CM-226	E CAPACITOR	22μF,16V
C46	NCT08CH-390A	CAPACITOR	39pF,50V
C47	QETC1HM-474	E CAPACITOR	0.47μF,50V
C48	QETC1CM-226	E CAPACITOR	22μF,16V
C49	QETC1HM-225	E CAPACITOR	2.2μF,50V
C50	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C51	NCB31EK-103A	CAPACITOR	0.01μF,25V
C52	NCB31EK-103A	CAPACITOR	0.01μF,25V
C53	QETC1CM-476	E CAPACITOR	47μF,16V
C54	NCT06CH-101A	CAPACITOR	100pF,50V
C55	NCT06CH-101A	CAPACITOR	100pF,50V
C56	QETC1HM-475	E CAPACITOR	4.7μF,50V
C57	NCT06CH-301A	CAPACITOR	300pF,50V
C58	NCT06CH-301A	CAPACITOR	300pF,50V
C59	NCT06CH-181A	CAPACITOR	180pF,50V
C60	NCT06CH-101A	CAPACITOR	100pF,50V
C61	NCT08CH-271A	CAPACITOR	270pF,50V
C62	NCT08CH-820A	CAPACITOR	82pF,50V
C63	NCT08CH-221A	CAPACITOR	220pF,50V
C64	NCT08CH-301A	CAPACITOR	300pF,50V
C65	NCT08CH-301A	CAPACITOR	300pF,50V
C66	NCB31EK-103A	CAPACITOR	0.01μF,25V
C67	QETC1CM-476	E CAPACITOR	47μF,16V
C69	NCB31EK-103A	CAPACITOR	0.01μF,25V
C70	QETC1HM-225	E CAPACITOR	2.2μF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C71	QETC1HM-225	E CAPACITOR	2.2µF,50V
	C85	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C86	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C87	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C88	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C89	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C99	NCF31HZ-103A	CAPACITOR	0.01µF,50V
	C102	NCB31EK-103A	CAPACITOR	0.01µF,25V
	C104	QETC1HM-224	E CAPACITOR	0.22µF,50V
	C106	NCT08CH-121A	CAPACITOR	120pF,50V
	L2	PU48530-271K	COIL	270µH
	L4	PU48530-331K	COIL	330µH
	L5	PU48530-100J	COIL	10µH
	L6	PU48530-470J	COIL	47µH
	L7	PU48530-101K	COIL	100µH
	L8	PU48530-101K	COIL	100µH
	LC1	PELN0937	LC TRAP,LC VCO	
	LC3	PELN1149	EQUALIZER	
	LC4	PELN0939	LC TRAP	
⚠	X1	PEVB0549	CRYSTAL RESONATOR	
	K1	QRSA08J-0R0Y	RESISTOR	0Ω,1/10W
	CN1	PEMC0919-130K	PIN HEADER,(1-30)MAIN	
	CN2	PEMC0919-130K	PIN HEADER,(1-30)MAIN	

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A/C HEAD BOARD <12>

PW1	PB40068A-01	AUDIO CONTROL BOARD ASSY	
CN1	PU60910-107	CONNECTOR,,(1-7)MAIN	

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DEMOD BOARD ASSEMBLY <14>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW1	PB10816B-01	DEMOD BOARD ASSEMBLY	
	IC101	UPC1872CU	IC	
	Q101	DTC114TU	TRANSISTOR	
	Q102	DTC114TU	TRANSISTOR	
	R101	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
	R102	QRSA08J-302YN	RESISTOR	3kΩ,1/10W
	R103	QRSA08J-512YN	RESISTOR	5.1kΩ,1/10W
	R104	QRSA08J-563YN	RESISTOR	56kΩ,1/10W
	R105	QRSA08J-563YN	RESISTOR	56kΩ,1/10W
	R106	QRSA08J-513YN	RESISTOR	51kΩ,1/10W
	R107	QVZ3521-473Z	V RESISTOR,SEPARAT.1	
	R108	QRSA08J-513YN	RESISTOR	51kΩ,1/10W
	R109	QVZ3521-104Z	V RESISTOR,SEPARAT.2	
	R110	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R111	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R112	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R113	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
	R114	QRSA08J-334YN	RESISTOR	330kΩ,1/10W
	R115	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R116	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R117	QRSA08J-123YN	RESISTOR	12kΩ,1/10W
	R118	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
	R119	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
	R120	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
	R121	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
	R122	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
	R123	QRSA08J-303YN	RESISTOR	30kΩ,1/10W
	R124	QVPC624-103	V RESISTOR,FILTER	
	R125	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
	R126	QVPC624-223	V RESISTOR,STEREO VCO	
	R127	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R128	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R129	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
	C101	QEK61CM-106	E CAPACITOR	10µF,16V
	C102	QCYA1HK-103	CAPACITOR	0.01µF,50V
	C103	QCYA1EK-473	CAPACITOR	0.047µF,25V
	C104	QEKF1HM-474	E CAPACITOR	0.47µF,50V
	C105	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C106	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C107	QCYA1HK-103	CAPACITOR	0.01µF,50V
	C108	QEKF1CM-476	E CAPACITOR	47µF,16V
	C109	QEKF1HM-105	E CAPACITOR	1µF,50V
	C110	QEKF1HM-105	E CAPACITOR	1µF,50V
	C111	QEE81CJ-335	TA E CAPACITOR	
	C112	QEE81CJ-106	TA E CAPACITOR	
	C113	QEKF1CM-106	E CAPACITOR	10µF,16V
	C114	QCYA1HK-103	CAPACITOR	0.01µF,50V
	C115	QEKF1CM-106	E CAPACITOR	10µF,16V
	C116	QCYA1HK-103	CAPACITOR	0.01µF,50V
	C117	QEKF1HM-105	E CAPACITOR	1µF,50V
	C118	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C119	QEKF1CM-226	E CAPACITOR	22µF,16V
	C120	QCYA1EK-104	CAPACITOR	0.1µF,25V
	C121	QEKF1HM-105	E CAPACITOR	1µF,50V
	C122	QEKF1EM-475	E CAPACITOR	4.7µF,25V
	CN101	PEMC0778-108Y	PIN HEADER,(2-9)MAIN	

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DISPLAY BOARD ASSEMBLY <21>

PW1	PB10942A1	DISPLAY BOARD ASSEMBLY,S5300U	
	PB10942B1	DISPLAY BOARD ASSEMBLY,S7300U	
IC1	UPD16312GB(P)	IC	
	or UPD16312GB(M)	IC	
IC2	GP1U581X	IR DETECT UNIT	
	or HC-377J	IR DETECT UNIT	
D1	RD4.7ES-T1B2	ZENER DIODE	
D2	11ES2	DIODE	
D21	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D22	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D33	SLR-342MG3F	LE DIODE	
R6	QRD161J-333	RESISTOR	33kΩ,1/6W
R7	QRD161J-333	RESISTOR	33kΩ,1/6W
R8	QRD161J-333	RESISTOR	33kΩ,1/6W
R9	QRD161J-333	RESISTOR	33kΩ,1/6W
R10	QRD161J-333	RESISTOR	33kΩ,1/6W
R11	QRD161J-272	RESISTOR	2.7kΩ,1/6W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R12	QRD161J-272	RESISTOR	2.7kΩ,1/6W
R13	QRD161J-561	RESISTOR	560Ω,1/6W
R14	QRD161J-103	RESISTOR	10kΩ,1/6W
R15	QRD161J-513	RESISTOR	51kΩ,1/6W
R16	QRD161J-103	RESISTOR	10kΩ,1/6W
R17	QRD161J-331	RESISTOR	330Ω,1/6W
R20	QRD161J-472	RESISTOR	4.7kΩ,1/6W
R21	QRD161J-103	RESISTOR	10kΩ,1/6W
RA1	QRB045J-333M	RESISTOR ARRAY	33kΩ,1/8W
C2	QEK61HM-106	E CAPACITOR	10μF,50V
C3	QCC11EK-473	CAPACITOR	0.047μF,25V
C4	QCC11EK-473	CAPACITOR	0.047μF,25V
C5	QCBB1HJ-101	CAPACITOR	100pF,50V
C6	QEK60JM-476	E CAPACITOR	47μF,6.3V
C8	QCC11EJ-104	CAPACITOR	0.1μF,25V
C9	QCSB1HJ-330	CAPACITOR	33pF,50V
C10	QEK60JM-476	E CAPACITOR	47μF,6.3V
L1	PU48530-101J	COIL	100μH
S1	PU60392-2-2	TACT SWITCH,REC	
S2	PU60392-2-2	TACT SWITCH,PAUSE	
S3	PU60392-2-2	TACT SWITCH,INSERT	
S4	PU60392-2-2	TACT SWITCH,PLAY	
S5	PU60392-2-2	TACT SWITCH,A.DUB	
S6	PU60392-2-2	TACT SWITCH,STOP/EJECT	
DI1	PEDP0104-02	FLUORESCENT DISPLAY PANEL	
HD1	PQM30038-6	LED HOLDER,D33	
HD3	PQ34668	FDP HOLDER(L)	
HD4	PQ34669	FDP HOLDER(R)	
J1	PW30101-C0AA442	PARALLEL WIRE,(1-2)REC SAFETY	
J2	PW30101-60AA443	PARALLEL WIRE,(1-3)CASS SWITC	
CN3	PEMC1101-105	CONNECTOR,(1-5)MAIN	
CN4	PEMC0889-013	CONNECTOR,(1-13)JACK	
CN5	PEMC1101-108	CONNECTOR,(1-8)MAIN	

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REC SAFETY BOARD ASSEMBLY <32>

PW4	PB10942A4	REC SAFETY BOARD ASSEMBLY
S35	PESW0589	PUSH SWITCH

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CASSETTE SW BOARD ASSEMBLY <33>

PW3	PB10942A3	CASSETTE SWITSH BOARD ASSEMBL
S36	PU61320	PUSH SWITCH
S37	PU61320	PUSH SWITCH

#⚠ REF No. PART No. PART NAME, DESCRIPTION

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SWITCH/JACK BOARD ASSEMBLY <36>

PW2	PB10942A2	SW/JACK BOARD ASSEMBLY,S5300U	
	PB10942B2	SW/JACK BOARD ASSEMBLY,S7300U	
D23	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D24	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D25	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D26	1SS132Y	DIODE	
	or 1N4148M	DIODE	
D31	SLR-342VC3F	LE DIODE,POWER LED	
D32	SLR-342DC3F	LE DIODE,DY CNT.LED S5300U	
	SLR-342MG3F	LE DIODE,DY.CNT.LED S7300U	
D41	1SS133	DIODE	
	or MA165	DIODE	
D42	1SS133	DIODE	
	or MA165	DIODE	
D50	1SS132Y	DIODE,S7300U	
	or 1N4148M	DIODE,S7300U	
R18	QRD161J-331	RESISTOR	330Ω,1/6W
R19	QRD161J-331	RESISTOR	330Ω,1/6W
R31	QRD161J-750	RESISTOR	75Ω,1/6W
S7	PU60392-2-2	TACT SWITCH,MARK	
S8	PU60392-2-2	TACT SWITCH,ERASE	
S9	PU60392-2-2	TACT SWITCH,CH +	
S10	PU60392-2-2	TACT SWITCH,CH –	
S11	PU60392-2-2	TACT SWITCH,POWER	
S12	PU60392-2-2	TACT SWITCH,D.CONTRAST	
S13	PU60392-2-2	TACT SWITCH,SP/EP	
S14	PU60392-2-2	TACT SWITCH,SELECT	
S15	PU60392-2-2	TACT SWITCH,START	
S16	PU60392-2-2	TACT SWITCH,MENU	
S17	PU60392-2-2	TACT SWITCH,S-VHS	
S18	PU60392-2-2	TACT SWITCH,TU/VIDEO	
S19	PU60392-2-2	TACT SWITCH,TIMER	
S20	PU60392-2-2	TACT SWITCH,V.STB S7300U	
HD1	PQM30038-1-2	LED HOLDER,X2 D31 D32	
JA1	PEMC1076	PIN JACK(SW),VIDEO	
JA2	PEMC0922	PIN JACK(SW),AUDIO L	
JA3	PEMC0922	PIN JACK(SW),AUDIO R	
CN1	PEMC1101-106	CONNECTOR,(1-6)MAIN	
CN2	PEMC0825-013	CONNECTOR,(1-13)DISPLAY	

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PRE/REC BOARD ASSEMBLY <43>

PW1	PB10965G	PRE/REC BOARD ASSEMBLY,S5300U
	PB10965J	PRE/REC BOARD ASSEMBLY,S7300U
IC1	JCP0047-WE	IC
IC201	AN3380NK	IC
Q1	2SC4081(QRS)	TRANSISTOR
Q2	2SA1576(QR)	TRANSISTOR
Q3	2SC4081(QRS)	TRANSISTOR
Q4	2SC4081(QRS)	TRANSISTOR

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
Q5	2SA1576(QR)	TRANSISTOR	
Q6	2SA1576(QR)	TRANSISTOR	
Q18	DTC143EU	TRANSISTOR	
Q19	2SC4081(QRS)	TRANSISTOR	
Q20	2SA1576(QR)	TRANSISTOR	
Q21	2SC4081(QRS)	TRANSISTOR	
Q101	2SC4081(QRS)	TRANSISTOR	
Q102	2SC4081(QRS)	TRANSISTOR	
Q103	2SC4081(QRS)	TRANSISTOR	
Q104	DTA144EU	TRANSISTOR	
Q105	2SC4081(QRS)	TRANSISTOR	
Q106	DTA124EU	TRANSISTOR	
Q107	DTC124EU	TRANSISTOR	
Q108	DTC144WU	TRANSISTOR	
Q109	DTC124EU	TRANSISTOR	
Q110	2SA1576(QR)	TRANSISTOR	
Q111	2SC4081(QRS)	TRANSISTOR	
Q112	2SA1576(QR)	TRANSISTOR	
Q113	2SC4081(QRS)	TRANSISTOR	
Q114	2SA1576(QR)	TRANSISTOR	
Q115	2SC4081(QRS)	TRANSISTOR	
Q116	2SC4081(QRS)	TRANSISTOR	
Q119	2SC4081(QRS)	TRANSISTOR	
Q201	DTC124TU	TRANSISTOR	
Q202	DTC124TU	TRANSISTOR	
Q203	DTC124EU	TRANSISTOR	
Q205	DTA114EU	TRANSISTOR	
Q206	DTC114WU	TRANSISTOR	
Q207	DTC124EU	TRANSISTOR,S7300U	
Q210	DTC144WU	TRANSISTOR	
Q211	DTA114EU	TRANSISTOR	
Q301	2SA933S(Q)	TRANSISTOR	
Q302	2SA933S(Q)	TRANSISTOR	
Q303	DTC124EU	TRANSISTOR	
Q304	2SA933S(Q)	TRANSISTOR	
D2	1SS355	DIODE	
D7	1SS355	DIODE	
D101	DAN202U	DIODE	
	or MA141WK	DIODE	
D102	1SS355	DIODE	
D103	DAN202U	DIODE	
	or MA141WK	DIODE	
D203	1SS355	DIODE	
D204	1SS355	DIODE	
R3	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R4	QRSA08J-220YN	RESISTOR	22Ω,1/10W
R5	QRSA08J-200YN	RESISTOR	20Ω,1/10W
R6	QRSA08J-271YN	RESISTOR	270Ω,1/10W
R7	QRSA08J-330YN	RESISTOR	33Ω,1/10W
R8	QRSA08J-360YN	RESISTOR	36Ω,1/10W
R9	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R10	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R11	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R12	NVP1311-153N	V RESISTOR,REC FM LEVEL	
R13	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R14	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R15	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R16	QRSA08J-151YN	RESISTOR	150Ω,1/10W
R17	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R18	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R19	NRVA62D-203N	RESISTOR	20kΩ,1/16W
R20	QRSA08J-821YN	RESISTOR	820Ω,1/10W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R21	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R22	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R23	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
R24	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R25	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R26	QRSA08J-512YN	RESISTOR	5.1kΩ,1/10W
R27	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R28	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R30	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R31	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R32	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R33	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R34	QRSA08J-301YN	RESISTOR	300Ω,1/10W
R35	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R36	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R44	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R48	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R63	QRSA08J-751YN	RESISTOR	750Ω,1/10W
R101	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R102	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R103	QRSA08J-183YN	RESISTOR	18kΩ,1/10W
R104	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R105	QRSA08J-183YN	RESISTOR	18kΩ,1/10W
R106	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R107	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R108	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R109	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R110	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R111	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R112	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R113	QVPA603-222Z	V RESISTOR,S-SP VIDEO EQ	
R114	QVPA603-222Z	V RESISTOR,S-EP VIDEO EQ	
R115	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R116	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R117	QRSA08J-752YN	RESISTOR	7.5kΩ,1/10W
R118	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R119	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R120	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R121	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R122	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R123	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R124	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R125	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R126	QRSA08J-112YN	RESISTOR	1.1kΩ,1/10W
R127	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R128	QRSA08J-471YN	RESISTOR	470Ω,1/10W
R129	QRSA08J-431YN	RESISTOR	430Ω,1/10W
R130	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R131	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R132	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R133	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R134	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R135	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R136	QRSA08J-561YN	RESISTOR	560Ω,1/10W
R137	QRSA08J-331YN	RESISTOR	330Ω,1/10W
R138	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
R139	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R140	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R141	QRSA08J-562YN	RESISTOR	5.6kΩ,1/10W
R142	QRSA08J-392YN	RESISTOR	3.9kΩ,1/10W
R151	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R152	QRSA08J-102YN	RESISTOR	1kΩ,1/10W

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
R201	QRSA08J-273YN	RESISTOR	27kΩ,1/10W
R202	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R203	QRSA08J-101YN	RESISTOR	100Ω,1/10W
R204	QRSA08J-274YN	RESISTOR	270kΩ,1/10W
R205	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R209	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R214	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R215	QRSA08J-560YN	RESISTOR	56Ω,1/10W
R216	QVPA603-331Z	V RESISTOR,AUDIO REC FM LEVEL	
R217	QRSA08J-153YN	RESISTOR	15kΩ,1/10W
R218	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R219	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
R220	QRSA08J-332YN	RESISTOR,S7300U	3.3kΩ,1/10W
R301	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R302	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R303	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R304	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
R305	QRSA08J-683YN	RESISTOR	68kΩ,1/10W
R306	QRSA08J-393YN	RESISTOR	39kΩ,1/10W
R307	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R308	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
C1	QCFA1CZ-105	CAPACITOR	1μF,16V
C2	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C3	QEKC0JM-107	E CAPACITOR	100μF,6.3V
C4	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C5	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C12	QCTA1CH-100	CAPACITOR	10pF,16V
C13	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C14	QCYA1EK-473	CAPACITOR	0.047μF,25V
C15	QCYA1EK-223	CAPACITOR	0.022μF,25V
C18	QCYA1EK-223	CAPACITOR	0.022μF,25V
C19	QCYA1EK-473	CAPACITOR	0.047μF,25V
C20	QCTA1CH-100	CAPACITOR	10pF,16V
C21	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C22	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C23	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C26	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C27	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C28	QEKC1CM-476	E CAPACITOR	47μF,16V
C29	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C30	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C31	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C32	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C33	QCYA1HK-222	CAPACITOR	0.0022μF,50V
C34	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C35	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C36	QCFA1CZ-105	CAPACITOR	1μF,16V
C37	QCTA1CH-391	CAPACITOR	390pF,16V
C39	QCTA1CH-151	CAPACITOR	150pF,16V
C40	QCFA1CZ-474	CAPACITOR	0.47μF,16V
C41	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C42	QEKJ1CM-476	E CAPACITOR	47μF,16V
C43	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C44	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C45	QEKJ1CM-476	E CAPACITOR	47μF,16V
C46	QCTA1CH-331	CAPACITOR	330pF,16V
C47	QCTA1CH-101	CAPACITOR	100pF,16V
C49	QCTA1CH-121	CAPACITOR	120pF,16V
C56	QCTA1CH-390	CAPACITOR	39pF,16V
C59	QCTA1CH-361	CAPACITOR	360pF,16V
C68	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C69	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C70	QCTA1CH-151	CAPACITOR	150pF,16V
C74	QCFA1CZ-105	CAPACITOR	1μF,16V
C101	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C102	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C103	QCTA1CH-101	CAPACITOR	100pF,16V
C104	QCTA1CH-101	CAPACITOR	100pF,16V
C105	QCTA1CH-680	CAPACITOR	68pF,16V
C106	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C107	QCTA1CH-390	CAPACITOR	39pF,16V
C108	QCTA1CH-390	CAPACITOR	39pF,16V
C109	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C110	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C111	QCTA1CH-330	CAPACITOR	33pF,16V
C112	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C113	QCTA1CH-470	CAPACITOR	47pF,16V
C114	QCTA1CH-270	CAPACITOR	27pF,16V
C115	QCTA1CH-330	CAPACITOR	33pF,16V
C116	QCTA1CH-180	CAPACITOR	18pF,16V
C117	QCTA1CH-180	CAPACITOR	18pF,16V
C118	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C119	QCTA1CH-220	CAPACITOR	22pF,16V
C120	QCTA1CH-150	CAPACITOR	15pF,16V
C122	QCTA1CH-180	CAPACITOR	18pF,16V
C123	QCTA1CH-390	CAPACITOR	39pF,16V
C124	QCTA1CH-150	CAPACITOR	15pF,16V
C125	QCTA1CH-820	CAPACITOR	82pF,16V
C126	QCTA1CH-120	CAPACITOR	12pF,16V
C127	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C128	QEKC1CM-476	E CAPACITOR	47μF,16V
C129	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C133	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C201	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C202	QCYA1HK-391	CAPACITOR	390pF,50V
C203	QCYA1HK-561	CAPACITOR	560pF,50V
C204	QCYA1HK-102	CAPACITOR	0.001μF,50V
C205	QCYA1HK-561	CAPACITOR	560pF,50V
C206	QCYA1HK-102	CAPACITOR	0.001μF,50V
C207	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C208	QCYA1HK-391	CAPACITOR	390pF,50V
C209	QEKC0JM-107	E CAPACITOR	100μF,6.3V
C210	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C211	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C213	QCTA1CH-331	CAPACITOR	330pF,16V
C214	QCTA1CH-330	CAPACITOR	33pF,16V
C216	QCYA1HK-103	CAPACITOR	0.01μF,50V
C218	QCYA1HK-102	CAPACITOR	0.001μF,50V
C219	QCYA1HK-103	CAPACITOR	0.01μF,50V
C220	QEKC1CM-476	E CAPACITOR	47μF,16V
C221	QCYA1HK-103	CAPACITOR	0.01μF,50V
C224	QCFA1CZ-224	CAPACITOR	0.22μF,16V
C225	QCYA1HK-103	CAPACITOR,S7300U	0.01μF,50V
C226	QCTA1CH-101	CAPACITOR	100pF,16V
C301	QCFA1HZ-223	CAPACITOR	0.022μF,50V
C302	QCTA1CH-151	CAPACITOR	150pF,16V
C303	QCTA1CH-180	CAPACITOR	18pF,16V
C304	QCTA1CH-220	CAPACITOR	22pF,16V
C305	QCTA1CH-102	CAPACITOR	0.001μF,16V
C306	QCTA1CH-220	CAPACITOR	22pF,16V
C307	QEKJ1CM-106	E CAPACITOR	10μF,16V
C308	QCFA1HZ-103	CAPACITOR	0.01μF,50V
L1	PELN0975-101JZ	COIL	100μH
L2	PELN0975-101JZ	COIL	100μH

#△	REF No.	PART No.	PART NAME, DESCRIPTION	
	L3	PU59988-151JY	COIL	150μH
	L4	PU59988-221J	COIL	220μH
	L5	PELN0975-101JZ	COIL	100μH
	L7	PU59988-180J	COIL	18μH
	L12	PELN0975-101JZ	COIL	100μH
	L101	PU59988-560J	COIL	56μH
	L102	PU59988-150J	COIL	15μH
	L103	PU59988-270J	COIL	27μH
	L104	PU59988-270J	COIL	27μH
	L105	PU59988-560J	COIL	56μH
	L106	PU59988-220JY	COIL	22μH
	L107	PU59988-390J	COIL	39μH
	L108	PU59988-221J	COIL	220μH
	L109	PU59988-100J	COIL	10μH
	L112	PELN0975-101JZ	COIL	100μH
	L201	PELN0975-101JZ	COIL	100μH
	L202	PELN0530-221JZ	COIL	220μH
	L301	PU59988-150J	COIL	15μH
	L302	PELN0975-101JZ	COIL	100μH
	SD1	PQ21805	SHIELD FLAME	
	CN1	PU59973-11	CONNECTOR,(1-11)UPPER DRUM	
	CN2	PEMC1056-114	CONNECTOR,(1-14)MAIN	
	CN3	PEMC1056-113	CONNECTOR,(2-14)MAIN	

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DIGITAL SUB BOARD ASSEMBLY <49>

PW5	PB10942B5	DIGITAL SUB BOARD ASSEMBLY	
IC101	LC7455A	IC	
Q101	2SA933S(QRS)	TRANSISTOR	
R105	QRD161J-222	RESISTOR	2.2kΩ,1/6W
R106	QRD161J-201	RESISTOR	200Ω,1/6W
R107	QRD161J-103	RESISTOR	10kΩ,1/6W
R108	QRD161J-103	RESISTOR	10kΩ,1/6W
R109	QRD161J-105	RESISTOR	1MΩ,1/6W
R110	QRD161J-103	RESISTOR	10kΩ,1/6W
C103	QETC1HM-104	E CAPACITOR	0.1μF,50V
C104	QCBB1HK-102	CAPACITOR	0.001μF,50V
C105	QETC1HM-224	E CAPACITOR	0.22μF,50V
C106	QCBB1HK-102	CAPACITOR	0.001μF,50V
C107	QETC1AM-107	E CAPACITOR	100μF,10V
C108	QCVB1CM-103	CAPACITOR	0.01μF,16V
L101	PELN0975-101JZ	COIL	100μH
CN101	PEMC0723-014	CONNECTOR,(1-14)MAIN	
CN102	PEMC0723-010	CONNECTOR,(1-10)MAIN	

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Y/C SEPA BOARD ASSEMBLY <89>

#△ REF No.	PART No.	PART NAME, DESCRIPTION	
PW1	PB20669A	Y/C SEPA BOARD ASSEMBLY	
IC1	NJM2240M	IC	
IC2	JCP0043	IC	
Q1	2SC4081(QRS)	TRANSISTOR	
Q2	2SA1576(QRS)	TRANSISTOR	
Q3	2SC4081(QRS)	TRANSISTOR	
Q4	2SA1576(QRS)	TRANSISTOR	
Q5	2SC4081(QRS)	TRANSISTOR	
Q6	2SA1576(QRS)	TRANSISTOR	
Q7	2SC4081(QRS)	TRANSISTOR	
Q8	2SC4081(QRS)	TRANSISTOR	
Q9	2SC4081(QRS)	TRANSISTOR	
Q10	2SC3932(ST)	TRANSISTOR	
Q11	2SC4081(QRS)	TRANSISTOR	
Q12	2SC4081(QRS)	TRANSISTOR	
Q13	2SC4081(QRS)	TRANSISTOR	
Q14	2SC3932(ST)	TRANSISTOR	
Q15	2SA1576(QRS)	TRANSISTOR	
D1	DAP202U	DIODE	
R1	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R2	NRSA63J-471N	RESISTOR	470Ω,1/16W
R3	NRSA63J-361N	RESISTOR	360Ω,1/16W
R4	NRSA63G-432N	RESISTOR	4.3kΩ,1/16W
R5	NRSA63J-271N	RESISTOR	270Ω,1/16W
R6	NRSA63J-271N	RESISTOR	270Ω,1/16W
R7	NRSA63J-271N	RESISTOR	270Ω,1/16W
R8	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R9	NRSA63J-473N	RESISTOR	47kΩ,1/16W
R10	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R11	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R12	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R13	NRSA63J-182N	RESISTOR	1.8kΩ,1/16W
R14	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R15	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R16	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R17	NRSA63J-681N	RESISTOR	680Ω,1/16W
R18	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R19	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R21	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R22	NRSA63J-681N	RESISTOR	680Ω,1/16W
R23	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R24	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R25	NRSA63J-132N	RESISTOR	1.3kΩ,1/16W
R26	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R27	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R28	NRSA63J-361N	RESISTOR	360Ω,1/16W
R29	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R30	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R31	NRSA63J-223N	RESISTOR	22kΩ,1/16W
R32	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R33	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R34	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R35	NRSA63J-472N	RESISTOR	4.7kΩ,1/16W
R36	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R37	NRSA63J-361N	RESISTOR	360Ω,1/16W
R38	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R39	NRSA63J-101N	RESISTOR	100Ω,1/16W
R40	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R41	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R42	NRSA63J-331N	RESISTOR	330Ω,1/16W
R43	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R44	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R45	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R46	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R47	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R48	NRSA63J-102N	RESISTOR	1kΩ,1/16W
R54	NRSA63J-103N	RESISTOR	10kΩ,1/16W

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R63	NRSA63J-222N	RESISTOR	2.2kΩ,1/16W
R67	NRSA63J-153N	RESISTOR	15kΩ,1/16W
R68	NVP1311-223N	V RESISTOR,DIGITAL I/O LEVEL	
R69	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R70	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
R71	NRSA63J-562N	RESISTOR	5.6kΩ,1/16W
C1	NCS31HJ-120A	CAPACITOR	12pF,50V
C2	NCB31HK-103A	CAPACITOR	0.01μF,50V
C3	QEK60JM-107	E CAPACITOR	100μF,6.3V
C4	NCB31HK-103A	CAPACITOR	0.01μF,50V
C5	QEK61EM-475	E CAPACITOR	4.7μF,25V
C6	NCB31HK-102A	CAPACITOR	0.001μF,50V
C7	NCB31HK-103A	CAPACITOR	0.01μF,50V
C8	NCT08CH-6R0A	CAPACITOR	6pF,50V
C9	NCB31HK-103A	CAPACITOR	0.01μF,50V
C10	NCB31HK-103A	CAPACITOR	0.01μF,50V
C11	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C12	QEK60JM-337	E CAPACITOR	330μF,6.3V
C13	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C14	QEK60JM-107	E CAPACITOR	100μF,6.3V
C15	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C16	QEK60JM-107	E CAPACITOR	100μF,6.3V
C17	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C18	QEK60JM-107	E CAPACITOR	100μF,6.3V
C19	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C20	QEK60JM-107	E CAPACITOR	100μF,6.3V
C21	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C22	QEK60JM-337	E CAPACITOR	330μF,6.3V
C24	QEK60JM-476	E CAPACITOR	47μF,6.3V
C25	NCB31HK-103A	CAPACITOR	0.01μF,50V
C26	QEK61HM-105	E CAPACITOR	1μF,50V
C27	NCB31HK-103A	CAPACITOR	0.01μF,50V
C28	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C29	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C30	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C31	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C32	QEK60JM-476	E CAPACITOR	47μF,6.3V
C33	NCB31HK-103A	CAPACITOR	0.01μF,50V
C34	NCB31HK-103A	CAPACITOR	0.01μF,50V
C35	QEK60JM-476	E CAPACITOR	47μF,6.3V
C36	NCB31HK-103A	CAPACITOR	0.01μF,50V
C37	QEK61EM-335	E CAPACITOR	3.3μF,25V
C38	QEK60JM-476	E CAPACITOR	47μF,6.3V
C39	NCB31HK-103A	CAPACITOR	0.01μF,50V
C40	NCB31HK-103A	CAPACITOR	0.01μF,50V
C41	NCB31HK-103A	CAPACITOR	0.01μF,50V
C42	NCB31HK-103A	CAPACITOR	0.01μF,50V
C43	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C44	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C45	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C46	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C47	NCB31HK-103A	CAPACITOR	0.01μF,50V
C48	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C56	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C64	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C69	NCS31HJ-470A	CAPACITOR	47pF,50V
C70	NCS31HJ-470A	CAPACITOR	47pF,50V
C71	NCS31HJ-470A	CAPACITOR	47pF,50V
C72	NCS31HJ-470A	CAPACITOR	47pF,50V
C73	NCS31HJ-470A	CAPACITOR	47pF,50V
C74	NCS31HJ-470A	CAPACITOR	47pF,50V
C75	NCS31HJ-470A	CAPACITOR	47pF,50V

#⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C76	NCS31HJ-470A	CAPACITOR	47pF,50V
C77	NCS31HJ-470A	CAPACITOR	47pF,50V
C78	NCS31HJ-470A	CAPACITOR	47pF,50V
C79	NCS31HJ-470A	CAPACITOR	47pF,50V
C82	NCB31HK-103A	CAPACITOR	0.01μF,50V
C83	QEK60JM-476	E CAPACITOR	47μF,6.3V
C84	NCF31EZ-104A	CAPACITOR	0.1μF,25V
C89	QEK61CM-106	E CAPACITOR	10μF,16V
C91	QEK61HM-474	E CAPACITOR	0.47μF,50V
C92	QEK61HM-474	E CAPACITOR	0.47μF,50V
L1	PU48530-100J	COIL	10μH
L2	PU48530-101K	COIL	100μH
L3	PU59153-101K	COIL	100μH
L4	PU59153-101K	COIL	100μH
L5	PU48530-101K	COIL	100μH
L6	PU48530-101K	COIL	100μH
L7	PU48530-101K	COIL	100μH
L8	PU59153-101K	COIL	100μH
L9	PU48530-101K	COIL	100μH
L10	PU48530-101K	COIL	100μH
LPF1	PELN1062-S	LOW PASS FILTER	
LPF2	PELN1062-S	LOW PASS FILTER	
LPF3	PELN1062-S	LOW PASS FILTER	
LPF4	PELN1061-S	LOW PASS FILTER	
LPF5	PELN1061-S	LOW PASS FILTER	
LC1	PU59736-102	N FILTER	
LC2	PU59736-331	N FILTER	
SD1	PQ34851-1-1	SHIELD FRAME	
SD2	PQ34852-1-2	SHIELD COVER,X2	
CN1	PEMC0712-109	PIN HEADER,(1-9)DIGITAL SUB	
CN2	PEMC0712-110	PIN HEADER,(3-12)DIGITAL SUB	

SECTION 6
TECHNICAL INFORMATION

6.1 SYSCON CIRCUIT

6.1.1 Syscon CPU pin function (IC601) 1/2

PIN NO	LABEL	IN/OUT	NOTE
1	S. CURVE	IN	TUNING CHECK
2	AVRGFM	IN	AUTO TRACKING DATA (AVERAGE VOLTAGE OF PB FM LEVEL) INPUT
3	WA-DET	IN	NC
4	6. 5H DET	IN	PB SWITCHING POINT ADJUST PULSE
5	AVSS	-	GND
6	TEST	-	GND
7	X2	-	TIMER CLOCK (32. 768KHz)
8	X1	-	TIMER CLOCK (32. 768KHz)
9	VSS	-	GND
10	OSC1	IN	SYSTEM CLOCK (10MHz)
11	OSC2	OUT	SYSTEM CLOCK (10MHz)
12	RESET	IN	RESET AT CONNECT VCR TO AC
13	(NMI)	-	NC
14	FRONT (H)	OUT	FRONT A/V TERMINAL INPUT MODE: H
15	EDS CS	OUT	DIGITAL SUB (EDS) IC CHIP ENABLE
16	TRICK (H)	OUT	SPECIAL PB (SLOW/STILL) :H
17	V. C. CS	OUT	VIDEO CPU CHIP ENABLE
18	V.C. RESET	OUT	VIDEO CPU RESET
19	S. SENS	IN	LEADER TAPE DETECT (DETECT ON:L)
20	E. SENS	IN	TRAILER TAPE DETECT (DETECT ON:L)
21	P. MUTE (L)	OUT	PICTURE MUTE CONTROL (MUTE ON : L)
22	TU FG	IN	TAKE-UP REEL ROTATION DET/TAPE REMAIN
23	SUP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN
24	SP (L)	OUT	SP MODE:L
25	STILL	OUT	JOG/SHUTTLE SWITCH
26	JSB	IN	JOG DIAL PULSE INPUT (B)
27	JSA	IN	JOG DIAL PULSE INPUT (A)
28	LN21 (H)	IN	LINE 21H PULSE INPUT
29	LCM1	OUT	LOADING MOTOR DRIVE (1)
30	LCM2	OUT	LOADING MOTOR DRIVE (2)
31	H SEL	OUT	HEAD SELECT CONTROL (SP:L/LP:M/EP:H)
32	A/M/S	OUT	PRE/REC CIRCUIT CONTROL (AUTO:M/MANUAL:H/S&S:L)
33	REC ST (H)	OUT	REC START:H
34	H. RECST (L)	OUT	HiFi AUDIO REC START:L
35	FLY ST (H)	OUT	FLYING ERASE HEAD CONTROL (FE ON:H)
36	CBOXCTL	OUT	CABLE BOX ON/OFF CTL
37	V. REC (H)	OUT	VIDEO REC MODE:H
38	A. MUTE (H)	OUT	AUDIO MUTE CONTROL (MUTE ON:H)
39	TM CLK	OUT	SERIAL DATA SHIFT CLOCK OUTPUT
40	TU DATA	OUT	TUNING CONTROL SERIAL DATA OUTPUT

Table 6-1-1 SYSCON CPU pin function (1/2)

6.1.2 Syscon CPU pin function (IC601) 2/2

PIN NO	LABEL	IN/OUT	NOTE
41	SYNC. DET	IN	SYNC DETECT(NO SYNC:H)
42	S-DATA	OUT	SERVO IC CONTROL DATA
43	LOCK DET	OUT	TUNING LOCK CHECK
44	T. MUTE(H)	IN	TUNER MUTE CONTROL(MUTE ON:H)
45	VPCTL	OUT	V. PULSE ADDITION TIMING CONTROL
46	PAUSE(L)	OUT	CAPSTAN MOTOR CONTROL(PAUSE:L)
47	CAP REV	OUT	CAPSTAN MOTOR CONTROL(FWD:H/REV:L)
48	RAE OUT	OUT	REMOTE PAUSE CONTROL OUTPUT
49	STATUS	OUT	REMOTE CONTROL STATUS OUTPUT
50	RC IN	IN	REMOTE CONTROL DATA INPUT
51	COMPU	IN	AV COMPULINK MODE
52	CTL C/D	IN	CTL PULSE INPUT(MODE DETECT/BLANK PORTION DET)
53	PROTECT	IN	SWD5V/12V DETECT
54	I. DATA	OUT	EXPANNDER IC(IC608) SERIAL DATA
55	I. CLK	OUT	EXPANNDER IC(IC608) TRANSFER CLOCK
56	CSB	OUT	ON SCREEN IC CHIP SELECT
57	S-OUT	OUT	ON SCREEN CONTROL DATA
58	S-IN	IN	ON SCREEN/FDP CONTROL DATA
59	S-CLK	OUT	DATA TRANSFER CLOCK
60	H DATA	OUT	VIDEO IC CONTROL DATA
61	STB	OUT	CLOCK OUTPUT PERMISSION
62	H CLK	OUT	VIDEO IC DATA TRANSFER CLOCK
63	VCC	-	SYSTEM POWER
64	M. DATA	OUT	MEMORY IC DATA
65	E. DATA	OUT	EXPANNDER IC(IC607) DATA
66	TU-CE	OUT	TUNER UNIT CHIP ENABLE
67	CTL CLOCK	IN	INDEX CONTROL
68	M-CE	OUT	MEMORY IC CHIP ENABLE
69	CAP FG	IN	TAPE SPEED DETECT/BACK SPACE COUNT
70	DUTY I/O	IN/OUT	IN/OUT INDEX DATA CONTROL
71	D. FF	IN	DRUM ROTATION DETECT/REC TIMING CONTROL
72	AVCC	-	SYSTEM POWER(for ANALOG)
73	REC CTL. V	OUT	AUDIO REC LEVEL CONTROL VOLTAGE
74	P. DOWN	IN	POWER DOWN DETECT(POWER DOWN:H → L)
75	DRUM V	OUT	DRUM MOTOR CONTROL
76	CAP V	OUT	CAPSTAN MOTOR CONTROL
77	D. V. DET	IN	DRUM DRIVE VOLTAGE DETECT
78	TU-LED	IN	TUNER LED CONTROL
79	A. LVL(L)	IN	AUDIO INDICATOR LEVEL INPUT(Lch)
80	A. LEV(R)	IN	AUDIO INDICATOR LEVEL INPUT(Rch)

Table 6-1-2 SYSCON CPU pin function (2/2)